

FOREWORD

2011 was our first full year together in the Department of Agriculture. I thank all of the members of the DA family for the support and cooperation necessary for us to achieve the results contained in this annual report. Likewise, let us acknowledge the energy and enthusiasm of the various agri-fishery stakeholders — farmers and fishers, private sector investors, and local government officials.

Ang ating pagtutulungan ang nagsulong sa mga ani ng sektor ng agrikultura sa taong 2011.

Our focus in 2011 was to put in place the elements of our Food Staples Sufficiency Program. This involved preparing and having the DA budget approved, particularly the provisions pertaining to front-loading investments in public goods: irrigation, farm-to-market roads, and post-harvest facilities. During 2011, we proposed and obtained a 61% increase in the DA budget for 2012 – the highest allocation ever received by the Department.

Our other big task was harnessing broad support for the program. For this, I personally reached out to as many of our constituents as possible and sought their support for the DA. We met with farmers and fishers, with governors, mayors, barangay officials, irrigators' associations, the private sector, agri-fishery councils, and other national and local agencies. Their cooperation in various initiatives like the Mindanao Rural Development Program, the early planting program in Central Luzon, the IRRI support for community seed banking, the Agrikulturang Pantawid Pamilyang Pilipino, and other programs allowed us to forge ahead.

In addition to achieving sufficiency in food staples, our Department is tasked to deliver the services from farm to table for all the commodities that we need to nurture, connect to markets and make available at affordable prices. To accomplish this, we need to invigorate the entire DA system. The Regional Field Units and our programs, our frontliners, deserve the full support of the service units delivering various functions — from regulation, extension, information, planning, finance, budgeting, and human resource development. We will continue improving the way we operate by being ready to listen and implement necessary changes.

Further, we will continue to partner with farmers, fishers and livestock raisers, the private sector and local government units to maintain, if not further improve, the viability, quality and global competitiveness of our major agricultural, livestock and aquaculture and marine species. It includes keeping them free from the dreaded foot and mouth disease and avian influenza, and crop pests and diseases like mango pulp weevil, banana fusarium wilt, and abaca mosaic virus, among others.

Aiming for a more bountiful harvest in 2012, I therefore invite you to strengthen our partnership on the programs we have rolled out in 2011 and in launching and vigorously implementing the other programs we have planned and will further develop together.

Let this be our shared vision: Pagkaing sapat. Magsasaka at mamamayang angat. Tagumpay nating lahat!




PROCESO J. ALCALA
Secretary



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**“ENHANCED PRODUCTIVITY
AS WE WIN BACK
THE TRUST OF OUR
FARMERS AND FISHERFOLK.”**



DA Mission, Vision and Mandate

As stipulated in the Philippine Development Plan (PDP) 2011-2016, Chapter 4, Competitive and Sustainable Agriculture and Fisheries Sector, the agriculture and fisheries sector provides food and vital raw materials for the rest of the economy. As the sector grows and modernizes, it releases surplus labor to the industry and services sectors.

Rising productivity and efficiency in the sector are critical in maintaining the affordability of food and purchasing power, especially among the poor. The sector's development is therefore vital in achieving inclusive growth and poverty reduction as well as attaining the targets under the Millennium Development Goals (MDGs).

MDGs are the world's time-bound and quantified targets for addressing extreme poverty in its many dimensions-income poverty, hunger, disease, lack of adequate shelter, and exclusion-while promoting gender equality, education, and environmental sustainability.

MISSION

Increase the income of farmers and fisherfolk, thereby contributing to the achievement of the national goals of alleviating poverty, generating productive opportunities, fostering social justice and equity, and promoting sustainable economic growth.

VISION

Prosperous rural communities built on profitable farms that provide surplus for agro-industry and guarantees food security.

MANDATE

The Department of Agriculture is the principal agency of the Philippine government responsible for the promotion of agricultural and fisheries development and growth.

In pursuit of this, it provides a policy framework that directs public investments and, in partnership with the local government units (LGUs), provides the support services necessary to make agriculture and fisheries, and agri-based enterprises profitable and to help spread the benefits of development to the poor, particularly those in the rural areas.

I. Growth in agriculture in the wake of calamities¹

The Philippine agriculture sector has proven its resilience amidst severe typhoons in the past year, even while still in the throes of recovery from the long dry spell in 2010. The agriculture industry expanded by 2.34 percent in 2011, bolstered by the positive performances of the crops, livestock, and poultry subsectors, which also served to cushion the negative output from the fisheries subsector (*Figure 1a*).

The significant gains in the crops subsector, which contributed 49 percent to total agricultural production (*Figure 1b*), posted a 4.82 percent growth in output this year. Major crop gainers² comprise of palay, corn, sugarcane, mongo, rubber, cassava, and pineapple, with increases in gross value at constant 2000 prices ranging from 5.78 percent to 58.27 percent.

After the drought in 2010, palay and corn grew by 5.78 percent and 9.32 percent, respectively, reaching production levels of 16.68

million metric tons for palay and 6.97 million metric tons for corn. It is worth noting that the 2011 growth in rice production is second only to the country's 2008 record of 16.82 million MT.

Meanwhile, higher output levels were posted for the following crops: 58.27 percent for sugarcane, 21.83 percent for mongo, 7.71 percent for rubber, and 3.58 percent for pineapple. Overall gross value of crop production reached Php804.10 billion at current prices, representing a 19.47 percent increment from the previous year's record.

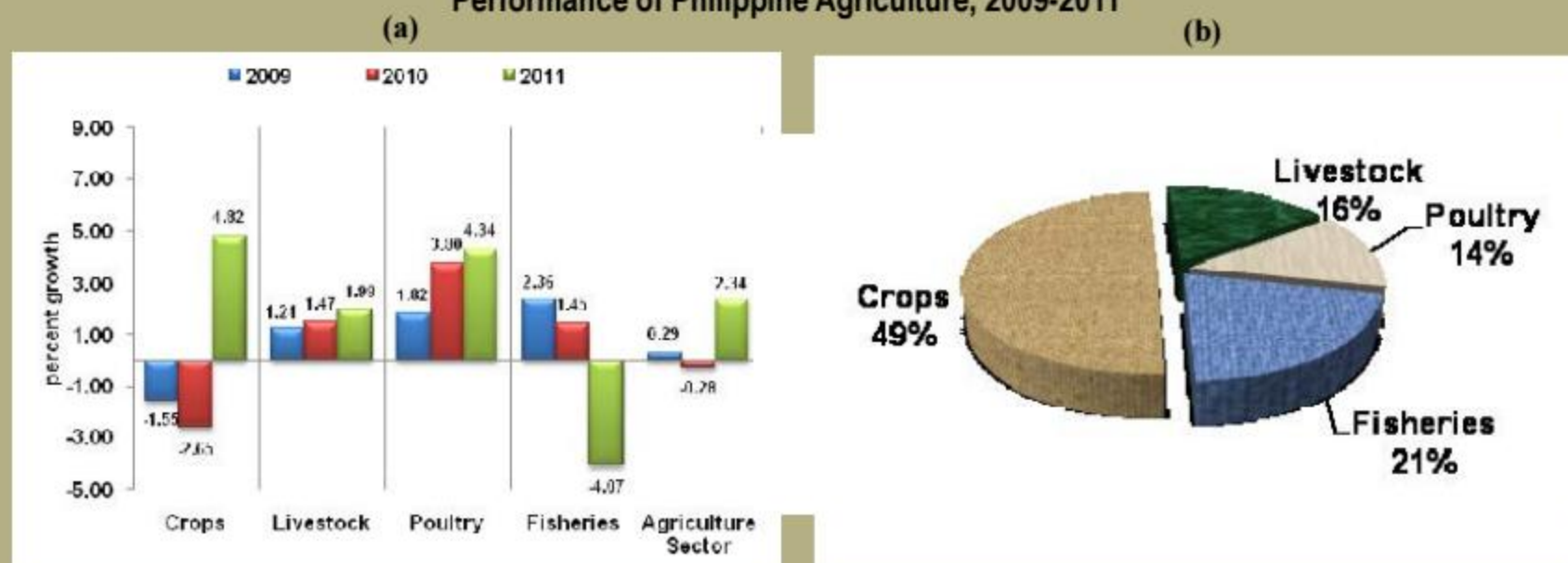
Value of livestock production went up by 1.99 percent, making up 16 percent of the total agricultural production in 2011. Hog production increased by 2.22 percent, while cattle and dairy outputs registered increments of 1.79 percent and 3.72 percent, respectively. The subsector grossed Php212.35 billion at current prices, which is 0.88 percent higher than the 2010 record.

The poultry subsector also enjoyed growth in 2011 at 4.33 percent, accounting for 13.71 percent of total agricultural output. Production gains were noted for chicken at 4.52 percent and chicken eggs at 4.15 percent. The gross value of output amounted to Php158.7 billion at current prices, up by 4.76 percent in 2011.

The production in fisheries subsector, however, which shares 21 percent to total agriculture, registered a 3.60 percent drop in output during the year. Despite gains in aquaculture at 2.44 percent, commercial and municipal fisheries production declined by 16.85 percent and 2.83 percent, respectively. The drop in commercial fisheries, in particular, was mainly due to decreased efforts in fishing during rough seas and strong winds experienced in the second quarter of 2011.

The main cause for the negative output of the commercial subsector was the closure of high seas

Figure 1
Performance of Philippine Agriculture, 2009-2011



Source: Bureau of Agricultural Statistics (BAS) 2011 Performance of Philippine Agriculture, January-December 2011.

Source: Bureau of Agricultural Statistics (BAS) 2012

pockets to commercial fishing boat operators. This is part of the management and conservation measures being implemented by the western and central pacific fisheries commission for tuna and tuna-like species. The sardine closure was only implemented last December 2011 so the impact will most likely be felt during 2012.

Despite these, the fisheries subsector grossed Php224.70 billion at current prices, or 1.65 percent higher than the 2010 level.

On the average, farmgate prices increased by 8.98 percent in 2011, with all subsectors (except for livestock) recording price gains. Commodities under the crops subsector were priced at 13.96 percent higher this year, while prices



of fishery products increased by 6.17 percent. In the poultry subsector, prices inched up by 0.47 percent. Prices of livestock products, on the other hand, decreased by an

average of 0.83 percent in 2011.

II. Agriculture's Contribution to Philippine Economy



Global economic slowdown, underspending on infrastructure, weak external demands, disruption in the supply chain, and damages incurred in the agriculture sector from typhoons have led to the modest performance of the country's economy in 2011, with Gross Domestic Product (GDP) growing only by 3.9 percent compared to 7.6 percent in 2010 (*Figure 2*).

The resilience of the Services sector throughout 2011, together

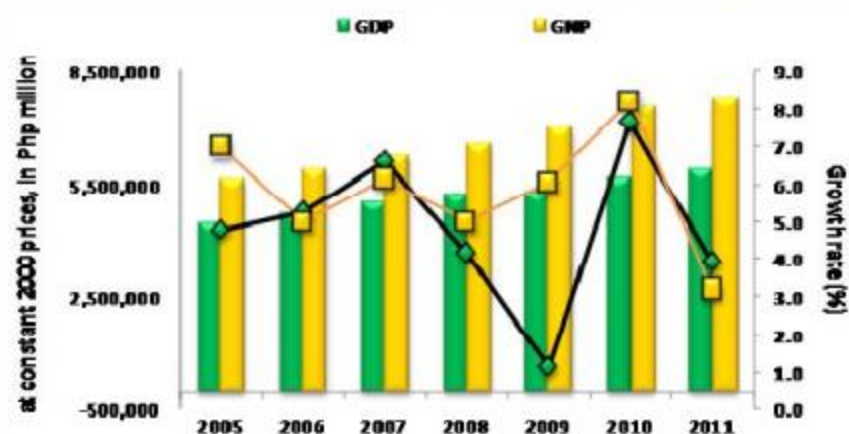
with the catch-up spending by the government in the fourth quarter, aided in lessening the impact of the economic slowdown in Europe, the sluggish economic recovery of the US, and the onslaught of typhoons towards the end of the year as GDP grew by 4.0 percent in the fourth quarter from 6.1 percent in the same period in 2010.³

Meanwhile, the sustained decline in fisheries in 2011 were buffered by the noteworthy performance

of palay, sugarcane, and corn in the first semester, leading to a 2.7 percent growth in the Agriculture, Hunting, Forestry, and Fishing (AFF) sector in 2011 from the negative 0.2 percent in 2010 (*Figure 3*). Banana, livestock, poultry, and agricultural activities & services also posted positive growths for the year (*Table 1*). The Industry sector grew by 2.3 percent from the 11.6 percent in 2010 despite

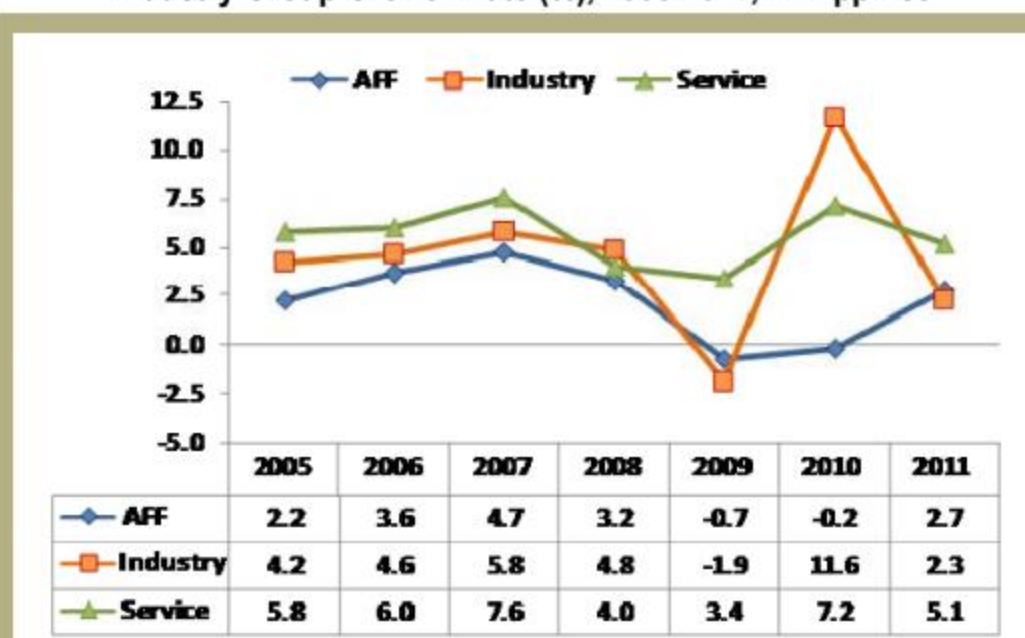
contractions in Construction, Electricity, Gas, and Water in the second and third quarters. The Services sector, which significantly cushioned the domestic economy all throughout the year, grew by 5.1 percent from 7.2 percent in 2010.

Figure 2
GNP and GDP Growth Rate (%), 2005-2011, Philippines



Source: Bureau of Agricultural Statistics (BAS), 2012

Figure 3
Industry Group Growth Rate (%), 2005-2011, Philippines



Source: National Statistical Coordination Board, 2012

Table 1
Gross Value Added (GVA) in Agriculture, Fishery and Forestry (AFF)
Philippines (2009-2011), in Growth Rate (%)

INDUSTRY / INDUSTRY GROUP	2009	2010	2011
1. AGRICULTURE INDUSTRY	-0.71%	0.02%	2.46%
a. Agriculture	-1.65%	0.16%	4.18%
Palay	-1.20%	-2.40%	5.92%
Corn	1.37%	-8.89%	9.50%
Coconut	2.06%	-0.60%	-1.75%
Sugarcane	-6.26%	-15.73%	59.72%
Banana	4.21%	0.63%	0.71%
Other Crops	-0.49%	2.74%	-3.89%
Livestock	-0.96%	0.64%	1.96%
Poultry	-1.97%	7.67%	4.40%
Agricultural activities and services	-8.55%	3.31%	3.20%
b. Fisheries	3.03%	-0.50%	-4.15%
2. FORESTRY	-2.04%	-31.31%	58.30%
GVA IN AFF	-0.72%	-0.16%	2.68%

Source: Bureau of Agricultural Statistics, 2012. Data were revised and base year was changed from 1985 to 2000; Time series data from 1998 to 2007 are not yet available from the source agency.

From the long dry spell in 2010, **palay** recovered and posted a significant growth of 5.78 percent. Gains for palay production and area harvested were noted in Cagayan Valley, Zamboanga Peninsula, Western Visayas, MIMAROPA, and SOCCSKARGEN.

Corn also showcased growth for the year with a remarkable 9.32 percent compared to the 9.34 percent drop in 2010, as corn farmers recovered from that year's dry spell. Increases in production were noted in Cagayan Valley, Western Visayas, SOCCSKARGEN, and the Bicol Region.

Coconut production – both for young and mature coconuts – slid in 2011 as the effects of El Niño prevailed in most coconut-producing provinces. Also contributing to the drop in production was the stress experienced by coconut palms from the strong output of the previous three years.

For 2011, the volume of production is estimated to reach 15.24 million MT, 1.71 percent less than the 15.51 million MT in 2010. Area planted to coconut also declined by 0.38 percent.

The top-producing regions in 2011 were Davao Region, Eastern Visayas, Northern Mindanao, Zamboanga Peninsula, and CALABARZON. Coconut production at current prices, meanwhile, grossed 48.75 percent in 2011 more than the previous year.

Sugarcane was a strong gainer in 2011 with output growths sustained all throughout the year. Contributing significantly to this was the extension in the harvesting and milling operations in Negros Occidental and Cebu. In addition, canes intended for ethanol were processed as sugar in Negros Occidental and Negros Oriental because of high price. Additional harvest areas for sugarcane were reported in Western Visayas, Northern Mindanao, and Davao Region. In Central Visayas,

higher sugarcane production was reportedly attributed to an increase in fertilization rate.

Growth in **banana** slowed down to 0.70 percent compared with the previous year's level of 0.98 percent despite expansions in area harvested in the first and third quarters of 2011 as well as reported increases in the number of bearing hills and harvest areas in Davao Region and Northern Mindanao. Production was significantly affected by the typhoons that hit some regions in Luzon, toppling down some bearing hills in Cagayan Valley and the Ilocos Region. Output increases, however, were reported in CALABARZON, MIMAROPA, Western Visayas, Central Visayas, and the ARMM.

Livestock grew by 1.96 percent in 2011 which was aided by: (a) better prices and higher demand for local beef, particularly in Central Luzon, CALABARZON, Western Visayas, Eastern Visayas, Davao Region, and SOCCSKARGEN; (b) better farmgate prices and increased demand for pork; and (c) increased productivity of commercial cattle dairy animals on the milkline under favorable weather conditions.

Gains in chicken, chicken egg,

and duck production contributed to the 4.43 percent growth in **poultry** in 2011. Expansion of broiler farms and high number of broilers dressed were reported during the year. Improvement in chicken egg production is ascribed to the increase in the number of laying flocks and improvements in egg-laying efficiency ratio, the latter was specifically noted in Ilocos Region, Cagayan Valley, Central Luzon, CALABARZON, Western Visayas, Central Visayas, Northern Mindanao, and SOCCSKARGEN. High demand for duck meat, meanwhile, was noted in Central Luzon, CALABARZON, and Western Visayas. In addition, the higher demand and better market prices for "balut" also boosted duck egg production.

From the production growth of 1.56 percent in 2010, **fishery** slipped even further during the year in review with a decline recorded at 3.60 percent. Aquaculture's growth can be attributed to: (a) increased stocks due to availability of fingerlings and abundant natural food supply in Rizal, Camarines Sur, and Antique; (b) higher demand, good growth, and availability of fry of tiger prawn in Cebu and Camarines Sur; and (c) higher volume of stocked crablets. Both commercial



and municipal fisheries suffered declines in output.

The AFF share to total GDP in 2011 reached about Php 680 billion or 11.49 percent share, up by Php 1.7 billion from the 2010 level (*Table 2*). Gross National Product (GNP) growth decelerated by 3.20 percent from 8.19 percent in the previous year, the slowest growth registered in the past five years (*Figure 2*).

INDUSTRY / INDUSTRY GROUP	2007	2008	2009	2010	2011
Agri, Fishery, Forestry	647,687	668,550	663,744	662,665	680,444
Industry Sector	1,621,226	1,699,171	1,666,601	1,859,515	1,901,400
Service Sector	2,759,375	2,869,379	2,966,895	3,179,358	3,342,564
GROSS DOMESTIC PRODUCT (GDP)	5,028,288	5,237,101	5,297,240	5,701,539	5,924,410
Net Primary Income	1,247,725	1,352,909	1,691,527	1,859,847	1,878,607
GROSS NATIONAL PRODUCT (GNP)	6,276,013	6,590,010	6,988,768	7,561,386	7,803,016

Source: Bureau of Agricultural Statistics, 2012. Data were revised and base year was changed from 1985 to 2000.

Despite the slow-down in the growth of the domestic economy for the year compared to the previous year, the average employment rate in 2011 increased by 3.21 percent from 2.78 percent in 2010⁴ (*Table 3*) with a net addition of 1,156,000 employed persons in the labor force. However, employment in the fishing subsector had a negative growth at 1.83 percent, losing about 27,000 employed persons in 2011. The AFF sector nevertheless consistently employed about 33 percent of the labor force, second only to the Services sector which has around 51 percent contribution.

INDUSTRY/SECTOR	Employed Persons ('000)			Growth Rate(%)	
	2009	2010	2011	2010	2011
EMPLOYED PERSONS (in thousands)	35,062	36,035	37,191	2.78	3.21
Agriculture, Fishery, and Forestry	12,061	11,964	12,273	-0.80	2.58
Agriculture, hunting, and forestry	10,589	10,486	10,785	-0.97	2.85
Fishing	1,473	1,477	1,450	0.27	-1.83
Industry	5,084	5,405	5,541	6.31	2.52
Services	17,917	18,666	19,414	4.18	4.01

⁴ NSO, <http://www.census.gov.ph/data/sectordata/data/ls.html>
Source: National Statistics Office, Annual Labor and Employment Estimate, 2012.



III. “Focusing our minds to deliver results”

The year in review is a study in contrast, not withstanding a glaring proof of climate change. After the drought experienced in 2010, below normal to excessive rainfall in 2011 heralded the onset of La Niña, with regions all over the country made vulnerable to unpredictable weather patterns. Varying rainfall distributions led to massive flooding and crops destruction in some provinces while farmlands in other regions benefitted from adequate moisture supply.

Despite the extensive damages on crops caused by typhoons in the latter half of 2011 – pulling down that period’s production levels⁵ – the overall output for palay and corn for the year was still significantly higher than in 2010. This is due to the recovery of the sector from the effects of El Niño and the significant production gains of palay and corn in the first half of 2011. Such output levels, were, in turn, aided by intensified rehabilitation and repair of irrigation facilities.

3.1 A Food-Secure Nation: Less of an Aspiration and More of a Reality

In the midst of the challenges brought about by these events, we have delivered the message to our farmers and fisherfolk, local

groups, local government officials, investors in agriculture, and others who believe that agriculture holds the key to our country’s progress, that we are ever more devoted to forging partnerships with them in fulfilling our role in government and that our farmers can rely on us for support as they recover their agricultural losses from natural disasters. Under the overall *Agri-Pinoy* framework, we have stepped-up the implementation of our various programs and projects to attain not only food security and local development, but also sustainable agricultural development through our national commodity programs.

Rice Program

Palay production rebounded strongly from the negative output of 2010 with a growth rate of 5.78 percent at 16.68 million MT, higher than the previous year’s performance by a remarkable 8.82 percent (*Figure 4*). Harvest area and yield per hectare increased by 4.2 percent and 1.5 percent, respectively.



Meanwhile, bulk of output increments for palay was taken from Western Visayas, Cagayan Valley, and MIMAROPA.

As one of the banner components of the Department of Agriculture that is principally-guided by the precepts of the *Agri-Pinoy* framework, especially on the attainment of food self-reliance, the Rice Program fulfills a crucial role in realizing the goals of the Food Staples Sufficiency Program (FSSP) for 2011 to 2016.

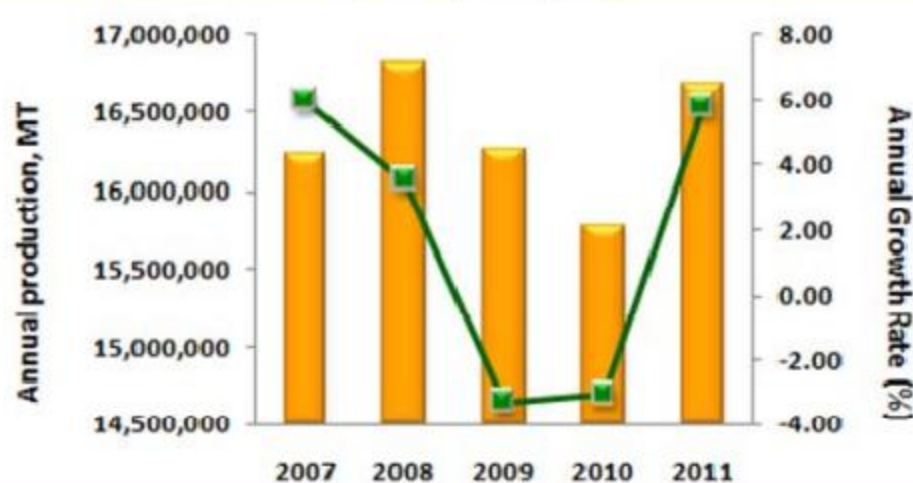
Self-sufficiency in food staples means not only satisfying our domestic requirements for food by 2013, but also ensuring that our farmers' needs are taken to heart while they are further empowered to their fullest potential. Management of food staples consumption is also underscored in the key strategies of the FSSP.

With these objectives in mind, the Rice Program continues to undertake various interventions from the national to the local levels to support rice production; irrigation, post-harvest, and other infrastructure facilities; market development services; extension, education and training services; and research and development:

Establishment of a Community-Based Seed-Banking Program that capacitates farmers, Irrigators' Associations (IAs), People's Organizations, and NGOs to organize, develop, and manage seed-banks in order to strengthen farmers' access to quality seeds at the right place and at the right time. Some 270,230 bags of 2-kilogram starter seeds – registered or traditional – were distributed in 2011⁶ to qualified members of IAs, with each kilogram costing the government only Php 40.

We have effected sustainable activities towards recovering losses from typhoon damages, particularly through Seed Buffer Stocking and the Rice Ratooning Project.⁷ Following the series of

Figure 4: Estimates of Palay Production and Annual Growth Rate, 2007-2011, Philippines



Source: Bureau of Agricultural Statistics, Country STAT, 2012

typhoons that hit the country in the third quarter, 50,000 hectares of rice production areas have been targeted for rice ratooning which began in November 2011. With each hectare expected to yield 25 cavans, this activity is set to generate 75,000 MT of rice while utilizing minimal inputs and labor as there is no need to plow the land and plant new seedlings for a second palay harvest.

In ratooning, tillers and grains are allowed to re-generate from remaining stubble or rice stalks through the application of urea fertilizer (at one bag per hectare). Ratooned rice is ready for harvest after 45 to 60 days.

Other advantages of ratooning include less water irrigation,

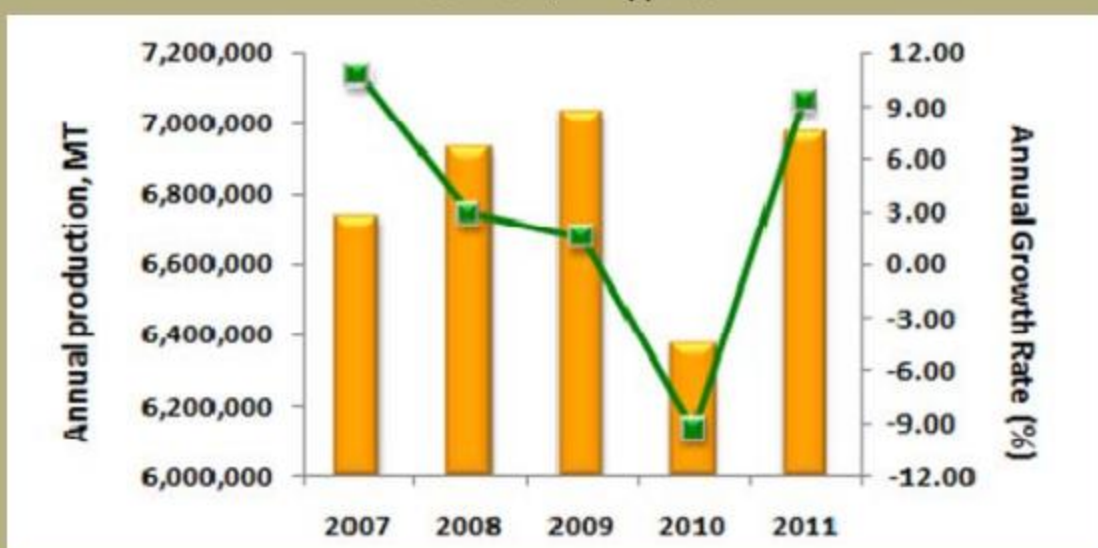
minimized risks of pest and diseases due to shorter duration of growth, keeping the genetic purity of the variety, and helping the soil recover its nutrients for the next cropping season.

Seed buffer stocking, meanwhile, provides for guaranteed availability of high-quality seeds after calamities, enabling farmers to immediately get back on their feet.

Support to farmers and farming communities through the provision of a total of 610 units of farm machineries (rice drum seeders, hand tractors, reapers, power tillers, etc.) and 112 post-harvest facilities and machineries⁸ (mechanical dryers, threshers, combine harvesters, multi-purpose drying pavement, palay sheds, moisture meters, etc.). In addition,



Figure 5: Estimates of Corn Production and Annual Growth Rate, 2007-2011, Philippines



Source: Bureau of Agricultural Statistics, Country STAT, 2012

construction was carried out for 18 small water impounding systems and diversion dams, servicing about 18,000 hectares of land.⁹

To give due recognition to the hard work and dedication that our palay farmers and local government units (LGUs) continue to demonstrate, we have instituted the **Rice Achievers' Awards**¹⁰ to encourage the full participation of LGUs involved in rice production, commend the highly-performing provinces, municipalities, cities, IAs, and agricultural extension workers, and highlight their contributions as important stakeholders in the national staple food sufficiency program.

Our farmers continue to discover effective, cost-efficient, and sustainable farming practices through participation in training and training-related events. In 2011, some 2,243 training courses (Farmers' Field School [FFS], Training of Trainers [TOT], School-on-the-Air [SOA], etc.) have been conducted, benefitting 26,918 participants. About 1,745 sites have also been established for technology demonstrations, most of which were for hybrid rice production.¹¹

Corn Program

Corn output for 2011 grew by 9.32 percent or equivalent to 6.97 million

MT from 6.38 million MT in 2010 (Figure 5). This was bolstered by yellow corn production growing by 14.6 percent, particularly in the 2nd quarter where it increased by 71.6 percent from its 2010 level. Corn harvest area expanded to 2.55 million hectares, while yield per hectare increased to 2.74 MT from 2010's 2.55 MT. Remarkable gains for corn were registered in Cagayan Valley and in SOCCSKARGEN.

For 2011, we continued providing assistance to Open-Pollinated Variety (OPV) Seed Production and exchange subsidy by giving a total of 6,672 kg of quality registered and certified OPV corn seeds for farm lands under counterpart arrangements with LGUs. For cassava production, some 13,918 high-yielding cassava planting materials were provided in support to the contract-growing arrangement between farmers and processors/end-users.¹²

Cassava production in 2011 reached 2.21 million MT, 5.14 percent higher than the 2.10 million MT level in 2010. Area harvested increased due to the expansion of contract-growing scheme by the San Miguel Corporation (SMC) in

Northern Mindanao and Cagayan Valley. Average yield per hectare, meanwhile, increased by 3.77 percent to 10.02 MT from the 9.66 MT posted in 2010. With a 48 percent share in the country's total production, ARMM remained the top producer in 2011, followed by Northern Mindanao and Central Visayas with 22 percent and 6 percent shares, respectively.¹³

In addition, we have sustained the **promotion of organic-based agriculture** through the establishment of techno-demo sites for soil amelioration and rehabilitation, while lime/dolomite have been distributed to farmer cooperatives to correct soil acidity in the farm clusters. Some 9,389 samples were also analyzed for soil fertility mapping and sampling.

We also continue promoting the *Tipid Abono* Program to aid in reducing farm production costs. In 2011, Bio-N, a microbial-based fertilizer, was distributed to 7,672 sites,¹⁴ helping farmers save one bag of urea per hectare at a cost of Php 360 per hectare.

For **biological control**, some 5,575,165 pieces of biological control agents¹⁵ were distributed to farmers, such as earwigs (for the control of corn-borer) and trichogramma cards (100 t-cards per hectare at a maximum cost of

Back-to-Basic in Farming

In Aroroy, Masbate, an agricultural extension worker has developed a microbial activator combining good microbes and enzymes that can be used as a fertilizer, for hastening composition, or for the removal of harmful microorganisms. Vincent Flores' BioMix, as a foliar fertilizer, produces healthy vegetables particularly in organic farming and organic hydroponics. The product also makes organic fertilizer safe to use. In slaughterhouses, it removes the odor of decaying carcasses within seconds, as the good microbes go to work in overpopulating the putrefying bacteria.

Organic farming gaining strides

Rising prices of goods, depletion of natural resources, and a heightened consumer awareness on the benefits of an all-natural diet are just some of the reasons why organic farming – or at least a gradual pronounced reliance on natural soil inputs – is being promoted to more and more farmers.

In Bohol, the CASABUT-Organic Farming System (OFS), conceptualized in April 2007 and registered in September 24, 2008, was organized to enhance its members' knowledge on organic farming. They have availed of the training courses and organic-based farming technologies provided by the government, with the help of LGUs and the private sector.

Today, CASABUT-OFS produces its own vermicast, natural farming inputs, and organically-produced farm products like rice, vegetables, and tilapia. The members are provided their own individual farms, with each farmer tilling 0.7 hectare.

Php 2.50 per t-card). Furthermore, a total of 74,749 hectares¹⁶ were monitored during the conduct of pest & disease surveillance and control operations by regional field units (RFUs), LGUs, and farmer-based teams, preventing the outbreak of pests and diseases.

We are making sure that our corn farmers not only cultivate their land, but cultivate it capably. As such, farmers were provided with 117 units of farm tractors (57 units for CY 2011 and 60 units under the CY 2010 continuing fund,¹⁷ with each unit costing Php 2.4 million) through counterpart-funding arrangements with LGUs, cooperatives, and farmer associations. Hence, 29,500 hectares of corn farm areas were properly cultivated with the use of these tractors.¹⁸

In addition, we have continued to **stress the importance of reducing post-harvest losses**, the Department, utilizing 2010 continuing funds, has established and completed 14 village-type post-harvest facilities (PHFs)¹⁹, as well as distributed 46 cassava granulator-cum-shredders, 78 hermetic cocoons, 25 corn mills, and 11 hammer mills.²⁰

Post-harvest losses were significantly reduced from 15 percent to 12.7 percent in areas

where PHFs were provided.²¹

In addition, **aflatoxin prevention** was taught to corn farmers in partnership with the Bureau of Agriculture and Fisheries Product Standards (BAFPS) to maintain aflatoxin levels in premium quality corn grains and grits at less than 50 parts per billion (ppb) and 20 ppb, respectively.

We have also **empowered some 34,685 farmers and agricultural technicians²² to become more efficient and productive** through the conduct of training sessions on pest management, nutrient management, farm mechanization, and other cultural practices in corn/cassava production and post-harvest.

To further intensify the promotion of white corn grits as a staple food, the DA- Agriculture and Fisheries Information System (AFIS) produced TV and radio infomercials emphasizing the importance and benefits of eating white corn, featuring national celebrities like eight-division World Boxing Champion and Sarangani Representative Manny Pacquiao and Leyte Representative Lucy Torres-Gomez. These 30-second audio-visual plugs were aired free over government TV (NBN4, RPN9, and IBC-13), cable, and radio (*Radyo ng Bayan*) stations.²³ We have **strengthened coordination with corn industry**

players such as the Philippine Maize Federation, Inc. (Phil Maize), National Corn Competitiveness Board (Corn Board), Philippine Association of Feed Millers, Inc. (PAFMI), and the livestock and poultry sectors to make sure that we are serving the best interest of our corn farmers and stakeholders, particularly on the stabilization of corn prices.²⁴

As with the assistance provided to rice farmers who were victims of typhoons, **we have strived to reduce corn losses** experienced during the year's blitz of natural calamities by distributing 500 bags of quality hybrid OPV seeds to our farmers.²⁵

High-Value Crops Development Program

A priority program of the Department to aid in poverty alleviation, sustainable growth, and the attainment of food security, the High-Value Crops Development Program provides interventions that seek to empower our high-value crops producers through increased incomes, provision of additional livelihood opportunities, and expanding export potential for organized producers and entrepreneurs.

For the year in review, the following interventions were made:²⁶

We continue to gradually empower our partner farmers' groups into producing their own planting materials through the provision of production facilities such as nurseries, rain shelters, greenhouses, and others. For 2011, we have established 85 units and rehabilitated 91 units of production facilities.

In the meantime, we continued providing planting materials for our growers. In 2011, we have distributed 5,630,827 pieces of planting materials²⁷ and 167,030 kg²⁸ of assorted vegetables, adlai, and soybean seeds. Adlai (Job's



tears), considered one of the best alternatives to rice, is now being sold as *chamorado*, *majablanca*, *sinukmani*, *adlai krispies*, and pasta noodles. HVCDP, through the Bureau of Agricultural Research (BAR) has also allocated Php 50 million for the Research and Development programs of different high-value crops commodity in 2011.

We have also provided for the installment of 20 small-scale irrigation systems such as spring development, small farm reservoirs, and shallow tube wells; and provided 398,860 hydro-polyethylene pipes (HDPE) and 8,653 water drums for increased agricultural production and income. In addition, 364 training and training-related events, such as Training of Trainers (TOT), Package of Technology (POT), and Farmers' Field School (FFS) were conducted in order to intensify extension services. Soil conditions were also determined through the provision of 2,156 units of pH meter.²⁹

To also support our onion farmers, we have provided financial assistance in the construction of 15 onion hanger storages for Regions I, II, III, and IV-B. Fourteen of these units have already been constructed, while consultations with Sangguniang Bayan members are ongoing for the completion of the unit located in Pasuquin, Ilocos Norte.³⁰ Moreover, we have created a National Onion Action Team (NOAT) consisting of all the major key players of the onion

Mt. Banahaw, the alternative supplier of "Baguio Vegetables"

Farmers in the vicinity of Sariaya, Quezon have been developing hectares of idle land at the foothills of Mt. Banahaw into vegetable gardens, boosted by the establishment of the Sentrong Pamilihan ng Produktong Agrikultura ng Quezon or SPPAQ. Nowadays, it is an expansive and productive farm area planted to eggplant, tomato, beans, ampalaya, cauliflower, broccoli, and lettuce, providing livelihood to more than 300 Quezon farmers and their families. On a weekly basis, up to 180 tons of produce are traded at the SPPAQ and are transported to Manila, Bicol, and Marinduque.



industry with the primary objective of assisting in the stabilization of onion supply.³¹

We instill into our young population the benefits of growing their own crops or produce through the *Gulayan sa Paaralan* Project which will also help in mitigating hunger, malnutrition, and poverty in the urban areas. This project, alongside the 'Gulayan sa Barangay' which is also being implemented nationwide, provides for home consumption and additional sources of income. For 2011, we have established 9,848 school gardens³² in support to food sufficiency.

Fisheries Program

The fisheries subsector registered the only negative performance in agriculture for 2011 with a 3.60 percent drop in volume of production (*Figure 6*). Although aquaculture output increased by 2.44 percent, the whole subsector was pulled down by the 16.85 percent contraction in commercial fisheries, as well as the 2.83 percent decrease in municipal fisheries.

The drop in the volume of unloading in commercial fisheries was observed in all quarters of 2011, with the biggest cuts in production noted during the first and third quarters at 18.09 percent and 19.33 percent, respectively. Although Zamboanga

Peninsula accounted for the bulk of commercial fish unloaded in 2011 at 214,436.45 MT, it still posted the biggest decrease in volume of unloading at 36.88 percent.

One of the main reasons for the decline as stated before was the reduction in volume of unloadings of sardines, attributed to the implementation of a fish moratorium by the DA-BFAR which started in December 2011. It sought to impose the banning of sardines fishing in 15 areas in Western Mindanao in order to save the dwindling population of sardines.

Reduced production is also attributed to the cut-back in the number of fishing days as a consequence of weather disturbances, such as northeasterly winds, rough seas, and strong winds as experienced during the near-successive onslaught of typhoons in the first half of 2011.

Unpredictable weather conditions, flooding, and the high cost of fuel also limited the operations of municipal fisherfolk. Production declined in all quarters, with the biggest drop registered during the first quarter at 4.71 percent. With an overall production of 1.33 million MT – lower by about 2.83 percent than the 2010 record – municipal fisheries registered its first decline in over 12 years.

Aquaculture production, meanwhile, with its total estimated output of 2,608,119 MT, surpassed its 2010 record by 62,151.71 MT, or 2.44 percent. The second quarter, in particular, saw it reach its highest level for the year with a 5.36 percent increase. Bolstering the overall production was the gains for seaweed at 1,840,833 MT, contributing to about 71 percent of the total aquaculture production. Seaweed farmers were encouraged to expand their operations due to the continuous demand by traders and processors. Other notable increments were also observed in marine fish cages and brackishwater fishponds. Milkfish production from aquaculture was 6.62 higher in

2011. This gain is credited on good farm management, availability of stocking materials, and sufficient supply of natural food that enhanced the quality of harvested species. Volume of milkfish produced from brackishwater ponds also rose, increasing by 3.15 percent from last year's level, with the provinces of Capiz, Iloilo, Negros Occidental, and Pangasinan displaying upward trends in production.

Meanwhile, milkfish harvest in brackishwater fishpens grew by 22.99 percent. Harvest areas in La Union and Aklan expanded due to the availability of fry/fingerling and the high demand for boneless milkfish in the market.

Increase in mud crab production is also worth noting, as it surpassed its 2010 record by 8.97 percent. More areas were harvested due also to the high demand as well as good market price. In Pampanga, the availability of quality crablets encouraged mud crab growers to put up more stocks.

Despite the decline in production, a remarkable performance under the Fisheries Program was achieved through the implementation of various projects and activities by BFAR, together with its regional offices, technology centers, Regional Fisheries Training Centers

(RFTCs), fishery-related agencies, and the LGUs.

The following interventions were carried out in the past year:

- Under the production enhancement program, a total of 2,978,459 pieces of broodstocks,³³ 196,180,534 fingerlings and 637,708 kg of seaweed seedlings were distributed. Also, 29,782 fishing gears and paraphernalia were distributed, benefitting around 25,687 marginal fisherfolk.³⁴

- A total of 1,219 training courses on aquaculture (tilapia, bangus, seaweeds, and others), municipal, regulatory and post-harvest technologies were conducted that benefited 37,096 participants.³⁵

Established of 30 seaweed nurseries: two (2) in Region II; four (4) in Region III; two (2) in Region IV-A; 10 in Region V; six (6) in Region VIII; two (2) in Region IX; and four (4) in Region XI.³⁶

- Maintained 45 hatcheries³⁷ and 63 mariculture parks/zones,^{38,39} with DA-BFAR recently commencing operations for nine (9) of these mariculture parks in Regions IV-B, VII, VIII,

Figure 6: Estimates of Fisheries Production 2007-2011, Philippines



Source: Bureau of Agricultural Statistics, Country STAT, 2012



IX, and the ARMM.⁴⁰ Three (3) mariculture parks (one [1] in Region XI and two [2] in ARMM) are also scheduled for launching.⁴¹

- Maintained eight (8) Regional Fish Port Complexes (RFPCs) and one (1) Municipal Fish Port (MFP) in coordination with the Philippine Fisheries Development Authority (PFDA). Insofar as processing activity is concerned, 2,643 MT of fishery products were processed in Zamboanga, Camaligan, Davao, and General Santos Fish Port Complexes. Volume of fish unloaded and transshipped at Infanta Municipal Fish Port in Quezon reached 3,211 MT, while arrivals of commercial and municipal fishing vessels reached 1,386. To date, a total of 74 MFPs were turned-over to LGUs nationwide.⁴²
- The Bureau is also promoting aquasilviculture and mangrove-friendly farming system to fisherfolk communities through mangrove reforestation as part of its resource enhancement program. A total of 11,136,000 mangrove propagules were planted nationwide.

Moreover, the Fisheries Program

has effected comprehensive regulations and standards for the following:⁴³

Coastal Resource Management.

Three hundred and eighty-nine (389) LGUs were assisted in Coastal Resource Management (CRM) planning and fisheries ordinance preparations. One hundred and thirty-two (132) rapid resource assessments on fish sanctuaries were conducted while 306 fish sanctuaries and 50 artificial reefs were monitored.

Red Tide Monitoring. On BFAR's commitment to safeguard public health, regular monitoring of the red tide phenomenon in critical bays is being sustained. Nine hundred and forty-six (946) monitoring activities were undertaken to protect public health while 9,252 samples were analyzed. Red Tide updates/ advisories were prepared and disseminated by the National Red Tide Task Force in coordination with government agencies (NGAs) and LGUs.

Inspection of Fish Processing Plants.

Conducted regular monthly plant inspections or audit to ensure compliance with the Hazard Analysis Critical Control Point (HACCP)-based quality assurance, Standard Sanitary Operating Procedures Program (SSOP), and Good Manufacturing Practices (GMP).

To date, a total of 42 processing plants established have passed the sanitary and phytosanitary standards of the European Union (EU) and were subsequently accredited.

Monitoring, Control, and Surveillance (MCS).

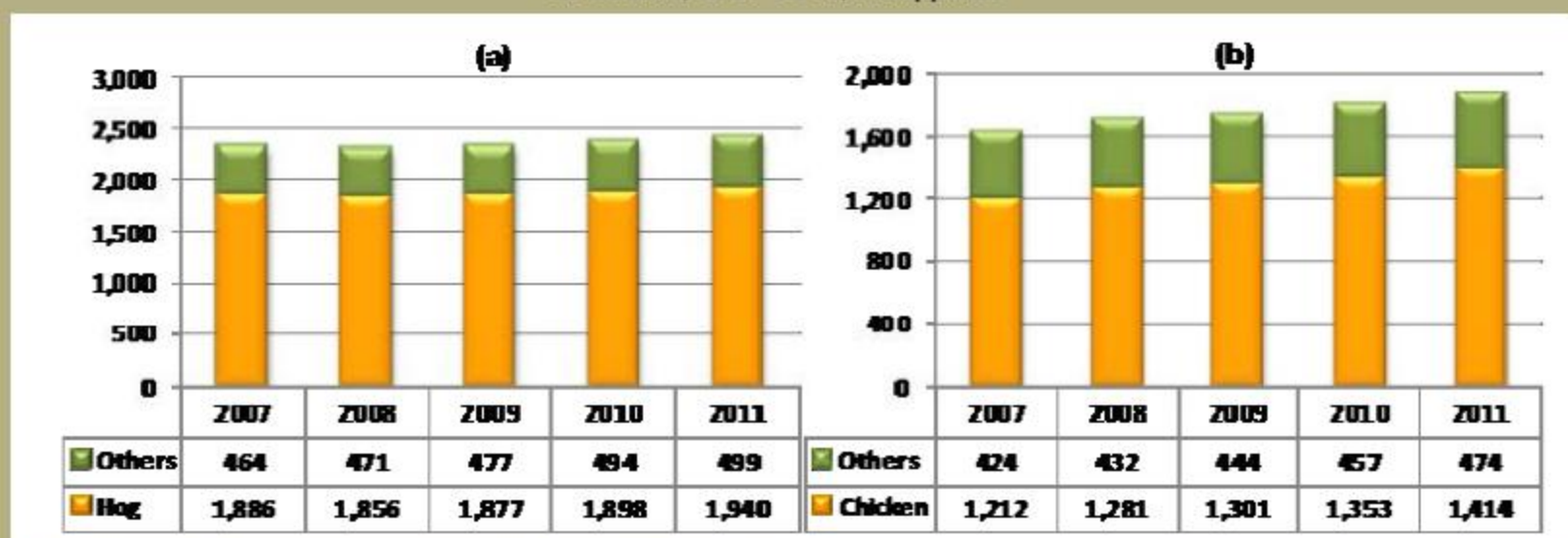
BFAR created the Fisheries Resource Protection and Law Enforcement Unit – Quick Response Team (QRT) as part of its resource protection program to intensify the enforcement of fishery laws and regulations and act on emergency situations like fish kills. Under the Bureau's Monitoring, Control and Surveillance or MCS, a total of 261 field operations/missions and 362 field evaluations were conducted nationwide by BFAR law enforcers in coordination with the Philippine Coast guard (PCG) and law enforcement authorities in order to curb illegal fishing and enforce the implementation of RA 8550. A total of 1,374 fish wardens and 128 fish examiners were deputized in order to assist in the stricter implementation of fishery laws, rules and regulations.

Also as part of the Bureau's resource protection program, BFAR implemented the Sardine Management Plan through the Joint DA-DILG Administrative Order No. 1 Series of 2011 to save the diminishing sardine population in Zamboanga by declaring a closed season for catching sardines in East Sulu Sea, Basilan Strait, and Sibuguey Bay from November 2011 to March 2012. Based on studies conducted, the closed season of sardines will help generate fisheries resources where, for every 1 ton of fish left to spawn, a three-fold increase in the biomass of the fish is expected.

Livestock and Poultry Program

The livestock and poultry subsectors posted increments of 1.99 percent and 4.34 percent, respectively, for the year in review, with the hog and chicken industries accounting

Figure 7: Estimates of Livestock (a) and Poultry (b) Production in '000MT, 2007-2011, Philippines



Source: Bureau of Agricultural Statistics, Country STAT, 2012

for 78 percent of the total livestock and poultry productions. The hog industry, furthermore, has contributed an average of 80 percent to the livestock sub-sector (*Figure 7a*) for the past five years, while the chicken industry shared an average of 75 percent in the poultry subsector for the same period (*Figure 7b*).

The increase in the number of fatteners and number of animals slaughtered in the Ilocos Region, Central Luzon, CALABARZON, Bicol Region, Northern Mindanao, and Davao Region factored in the increase in hog production. There was a heavier disposal of hogs for slaughter in these regions due to better farmgate prices and higher demand by traders.

For chicken, more stocks were brought to dressing plants in response to the high demand from households and fastfood chains, while an expansion of broiler farms and higher number of dressed broilers have also been reported. Commercial broiler and layer farms in Cagayan Valley, Bicol Region, Central Visayas, and SOCCSKARGEN provided additional supply in the fourth quarter to satisfy the increased demand during the holiday season.

The program continues to effect interventions that intensify support to our livestock and poultry farmers in order to make these industries more productive, competitive, and technology-savvy while ensuring that practices in livestock and poultry enterprises remain harmonious with environmental standards.

Concerted efforts by the Department of Agriculture with industry stakeholders have given way to the following achievements in 2011:

Our livestock and chicken products continue to enjoy movement within the country and the export market as the Philippines remains free from Foot-and-Mouth Disease (FMD) and Avian Influenza. On May

26, 2011, the Office International des Epizooties (OIE) recognized the country as FMD-free without vaccination, a reward for the almost four decades of determined efforts of disease control and eradication work by the Bureau of Animal Industry (BAI) through its Animal Health Program. This was also made possible through the support and cooperation from all stakeholders and donor countries such as Australia and Japan, as well as international organizations such as the Food and Agriculture Organization of the United Nations and the OIE. The Avian Influenza Preparedness Program, for its part, has been, and will be, sustained to maintain our Avian Flu-free status.^{44, 45}

These recognitions have allowed our animal raisers to venture into other export markets as we continue to export poultry and processed meat to Japan, day-old chicks to Brunei, Indonesia, Nepal, and Vietnam, and processed meat products to Australia, Bahrain, Cambodia, Doha, Qatar, Kuwait, Saudi Arabia, and the UAE.⁴⁶ The prospect, meanwhile, of Philippine pork products entering other countries, such as Singapore and Malaysia, has been opened up.⁴⁷

Other economically-important diseases such as Surra, Hemorrhagic Septicemia, Porcine Respiratory Reproductive Syndrome (PRRS),

etc. have also been successfully controlled.⁴⁸

Establishment of liquid nitrogen plants and nucleus and multiplier farms underline our sustained commitment towards improving not only our livestock production levels, but also the genetic quality of large and small ruminants. We continue to produce semen straws, and have distributed some 151,038 pieces⁴⁹ for the upgrading of carabaos, cattle, and goats.

We have underscored the potential of our indigenous animal genetic resources in providing livelihood and food for the most vulnerable sectors in the country. The Philippine Native Animal Development (PNAD) project, launched in March 2011, promotes the conservation and utilization of domesticated native food animals while complementing the organic agriculture program of the Department. Since these animals are known to survive harsh environmental conditions, this initiative also addresses the realities of climate change.⁵⁰

We sought to lay the foundations toward lessening importation of processed egg with the establishment of a Liquid Egg Processing Plant in San Jose, Batangas that will eventually make available affordable and quality processed eggs. This project will also assist in providing higher growth rate for our chicken egg production and increased value of chicken eggs.

We continue to be heedful of the perils of spikes in broiler and swine prices through the supply and demand forecasts that we publish quarterly. These are also being utilized by the private sector as production and marketing tools to avoid imbalance in supply and demand, while serving as tools in policy formulation by the government.⁵¹

National Coconut



Productivity Program

The coconut industry continues to gain strides in its marching orders to improve the lives of millions of Filipinos dependent on coconut. Uplifting the lives of coconut farmers remains a key priority, and interventions carried out for the coconut industry are strategic means of ensuring that there is supply for the domestic and international markets for traditional and emerging coconut by-products.

Despite the decline in coconut production 2011, as well as the contraction in export volume from 2.332 million MT in 2010 to 1.505 million MT in 2011 (accounted principally by coconut oil [CNO]), CY 2011 was still a banner year for the industry, generating foreign exchange earnings of USD 1.957 billion (or Php84.63 billion) – the highest record to date. This is in contrast to the USD 1.627.3 billion (or Php 73.41 billion) in 2010.

This is record proof that CNO has a niche market abroad despite the higher price, as CNO has a tremendous range of usage in the edible and industrial fields.

Select non-traditional exports are also on an upswing. Coco coir export volume rose from 4,223 MT in 2010 to 6,025.5 MT in 2011, while coconut water export volume increased ninefold from 1,807,583 liters in 2011 to 16,685,350 liters in 2011. Principal markets for coco coir are China, Taiwan, and Singapore, while coconut enjoys high demand in USA, Brazil and

Canada.⁵²

Projects for coconut productivity, nevertheless, have achieved the following for 2011:⁵³

Salt Fertilization Project (SFP). This projects aims to increase coconut productivity and improve resistance to pest and diseases through the use of common salt on fruit-bearing trees. For 2011, some 24,524 bags were applied over 6,131 hectares, with farmer-beneficiaries totaling 5,948. The increase in production of mature nuts in the fourth quarter by 1.36 percent has been attributed to this salt fertilization activity, alongside the encouragement brought by the high price of copra.

Participatory Coconut Planting Project (PCPP). The PCPP is a program designed for coconut planting and replanting using high-yielding open-pollinated varieties. For the year in review, 3,112,675 seedlings were planted over an area of 31,000 hectares, benefitting 32,530 coconut farmers.

KAANIB Project. To improve the lives of coconut farm households, enhance food security in coconut-growing communities, as well as develop good practices to increase farmers' incomes, the "Kasaganaan sa Niyugan ay Kaunlaran ng Bayan" (KAANIB) Project continues to serve as a platform for interventions that include the establishment of community-managed nurseries and planting of coconut seedlings, intercropping with high-value and cash crops, livestock integration,

and production and marketing of village-level high-value products and by-products.

It is a convergence approach to help shape select coconut-based areas into model communities that showcase optimum practices for increased coconut productivity. In 2011, 10 selected sites have been maintained and 20 livelihood projects were implemented, benefitting 1,216 farmer-participants.

3.2 Towards Realizing Food Staples Sufficiency

The importance of rice and other traditional staples cannot be understated. For most households, rice is at the heart of their diet, and it accounts for about 20 percent of food expenditures for all households, and 30 percent among the bottom third of households. As a durable crop, it provides for the livelihood of more than two million households engaged in rice-based farming, millions of farm laborers, and tens of thousands of merchants. Non-rice staples, meanwhile, such as white corn, cassava, sweet potato, and plantain remain important in many local diets, particularly in the poor rural households in the Visayas and Mindanao. These staples are often substituted for rice based on cross-price elasticities, such that an increase in the price of these commodities translates to a shift in consumption towards rice.⁵⁴

It is therefore crucial that, in



addressing food security and poverty, closer attention must be given to the other non-rice staples, and that the consumption of these must be actively encouraged to ease the pressure on rice.

We are raising productivity and competitiveness through the following interventions which are expected to expand harvest area, improve yields, reduce post-harvest losses, and boost total production: (1) accelerating the expansion of irrigation services; (2) ensuring the adoption of suitable high-quality seeds, fertilizers, and other integrated crop management practices; (3) sustaining research and development (R&D); (4) promoting mechanization of on-farm and post-harvest operation; (5) enhancing the effectiveness and strengthening the delivery of extension services; (6) boosting yield growth in rainfed areas; and (7) harnessing the potential of the upland rice ecosystem.⁵⁵

At the farm level, these interventions aim to raise productivity, improve cost efficiency, and competitiveness, and maximize the returns from farming.

In support of the strategies mentioned, the following are some of the measures we have also carried out for the year to aid in the food security and rice sufficiency thrust of the government:

'Quick-Turn-Around' (QTA) Program to be pursued in partnership with

Hauling of produce made easy

The construction of 28 tramlines all over the country in 2011 has continued to aid in lessening the burden of transport of produce among our farmers. Growers in Patnongon, Antique, in Nagcarlan, Laguna, in Sapuan, Benguet, and in La Paz, Zamboanga, among many others have found the usual hauling time of several hours or even half a day cut short to about 3 to 5 minutes. With the use of tramlines, farmers are able to maintain the freshness and quality of vegetables, as well as save up to 60% on hauling and transportation expenses. The availability of these tramlines, moreover, is encouraging farmers to develop more areas into vegetable farms to provide them a sustained source of income.

farmers' groups and LGUs alongside rice ratooning to recover the crops losses from typhoon damages. QTA was implemented right after harvest of the main wet season crop.

Provision of state-of-the-art Grain Moisture Meters⁵⁶ to our rice and corn farmers in order to assist them with an accurate read-out of the moisture content of grains. A hand-held device that can be transported and used in the field, these GMMs give our farmers an idea on the time required to dry their palay, milled rice, or corn, thereby reducing post-harvest losses, and eventually abandoning the "feel-and-grit" method that often leads to errors.

Imported GMMs cost USD 800 to 2,000 (shipping costs and tariff not included). To avoid incurring such huge costs, the Philippine Center for Postharvest Development and Mechanization (DA-PhilMech) has developed its own GMMs, priced at Php 13,500 each, which are currently being commercialized through the local firm Alexan Commercial. These local GMMs

are slowly gaining popularity among our farmers, traders, and millers. In time, such technology will have a significant role in attaining increased farmer income.

Promulgation of rice science and development as we seek to significantly reduce rice importation.

Notable technologies being utilized for increased rice productivity include “*PalayCheck*,” an integrated crop management system for rice which observes Good Agricultural Practices (GAP) on seed quality, land preparation, crop establishment, and proper management of nutrient, water, pest, and harvest; and “*Palayamanan*,” a diversified integrated rice-based farming system. Other technologies are leaf color charts (LCC) and minus-one element technique (MOET) kits, which are cost-saving and low-cost tools that aid farmers in determining the right amount and type of fertilizers.^{57,58}

In addition, we have stressed the importance of using certified seeds for their purity and minimum germination rate of 89 percent. Hybrid rice seeds are also being encouraged for cultivation as it can increase farmers’ yield by at least 15 percent.

Propagation of Low-Glycemic White Corn.⁵⁹ To step-up on our strategy of promoting alternatives to rice, we are funding the seed production of white corn at the Institute of Plant Breeding at the University of the Philippines, Los Baños, Laguna. The seed, a recommended variety, gives a yield that is nearly comparable to commercial white corn hybrid and has a low glycemic index which promotes slower absorption of carbohydrates and gradual release of glucose into the bloodstream, lessening the risk of diabetes and heart diseases. In addition, compared to rice, white corn provides more nutrition for having more protein, lysine, tryptophan, dietary fiber, minerals, and antioxidants.

Aside from the above-stated health benefits, white corn will impact significantly in reducing hunger and malnutrition in the uplands.

Complementary Planting of Tobacco in the Summer and Rice in the Wet Season⁶⁰ through a Php 20 million-worth of production assistance to tobacco farmers, in which a farmer tilling one hectare of land during the wet season will receive Php 18,000 with assistance from the National Tobacco Authority (NTA). This amount will then be increased to Php 30,000 to Php 40,000 per hectare during the tobacco season.

With this scheme, tobacco farmers are encouraged to be more productive as they lend a hand in attaining rice sufficiency while also generating additional income for their families during the wet season. Checks have already been distributed to over 1,484 farmer-cooperators in La Union, Pangasinan, Ilocos Sur, Ilocos Norte, Abra, and Mindoro who are scheduled to plant rice in over 1,242 hectares of land previously planted to tobacco.

Making farmers believe in government means showing them that the DA serves their interests. For 2011, we have **reduced rice importation** to 889,433.62 MT⁶¹ from 2,419,953.43 MT in 2010.⁶² Of the total volume imported, 654,994.64

MT were imported by the private sector and farmers’ groups, 200,000 MT are NFA imports, and 34,438.98 MT are actual Country-Specific Quota (CSQ) and Minimum Access Volume (MAV) arrivals. These resulted in savings for government and served the interest of Filipino farmers. For 2012 and 2013, while we will continue to import, the NFA Council is considering allowing the private sector to handle bigger portions of imports.

3.3 Providing Infrastructure Support and Post-Harvest Services

Improving productivity in the agriculture sector would be inadequate if post-harvest losses continue to drive a gaping hole in the earnings of our producers. In the same token, infrastructure that play a crucial role in increasing production yield but which cannot be afforded by our individual farmers should be made available and long-lasting.

To this end, **we have sought to front-load investments in public goods** – particularly irrigation, farm-to-market roads (FMRs), and post-harvest facilities. With this intent presented successfully to the legislative and executive branches of government, the DA has been allotted its highest budget in recent history with Php61.42 billion for 2012, representing an increase of



59 percent over 2011. Some 40 percent of this budget is allocated for infrastructure.

We have committed to ensure that FMRs are being built for the purpose for which they serve. FMRs were redesigned so that a substantial percentage of the budget goes to concreting critical road sections so that these roads do not disappear after a flood. Utilizing 2010 continuing funds, we have already constructed a total of 2,142.47 km of FMRs.⁶³ Geo-tagging of infrastructure projects is also continuously being carried out for the government to be able to track them online – from project identification, to bidding, up to the various stages of completion.

We also continue to promote the construction and use of agricultural tramlines, which are increasingly proving to be valuable means of transporting goods even in mountainous and remote areas, with hours of hauling time reduced to a few minutes while cost of hauling is cut by half from two pesos to one peso per kilogram of produce. Under the 2008 budget, we have established 20 tramlines, while 18 units were built utilizing the 2009 funds, covering a total of 21.84 km.⁶⁴ Plans are underway for the construction of the country's **first state-of-the-art Trading Center in Benguet**,⁶⁵ Called the Benguet Agricultural Trading Center (or Benguet Agri-Pinoy Trading Center (APTC)), it is to be located in a four-hectare lot owned by the Benguet State University (BSU) in La Trinidad, Benguet⁶⁶ for the benefit of 5,000 farmer-families, creating around 3,000 jobs. As part of the country's integrated supply chain, it is envisioned to make the trading operations of vegetables and fruits faster, from unloading until payment of goods delivered, thus minimizing spoilage and wastage.

The Benguet APTC will have the following features: three large trading areas, cold storages, solid waste treatment facility, a dormitory and lounge, commercial



spaces for a cafeteria, commercial or cooperative bank, offices for farmers' cooperatives, parking area for delivery trucks and refrigerated vans, and other ancillary support facilities. It is also designed to complement the existing trading post near the La Trinidad Municipal Hall.

Moreover, it will feature a modern processing facility to be funded by a USD2.5-million grant from the Korea International Cooperation Agency (KOICA) for the processing of vegetables into ready-to-cook 'chopsuey' packs, vegetable chips, and starch.

In support of this trading complex, the DA has also established a vegetable processing center in Buguias, Benguet to serve as the consolidation point of vegetables from Buguias and its adjacent municipalities. This facility is being managed by the Seeds and Fruits Multipurpose Cooperative and is expected to benefit more than 500 farm families and generate 1,000 jobs.

The DA will establish similar agricultural and fishery trading and processing centers in other major provinces. Initial sites targeted for 2012 include: Urdaneta, Pangasinan; Dagupan City, Nueva Ecija; Tayabas City, Quezon; Bacolod City and Sagay City in Negros Occidental; Argao, Cebu; and Cotabato City. The establishment of a producers' market at the Food Terminal Inc. (FTI) in Taguig City will also be

implemented in 2012 to cater to the supply requirements of wholesale and retail markets, including institutional buyers from Metro Manila.

More than ever, we have underscored the importance of establishing and maintaining irrigation facilities to support crops production. The National Irrigation Administration (NIA) was appropriated Php 12.79 billion, or 37 percent of the total DA budget, for 2011. Of the total NIA budget, Php 7.75 billion has been allotted for 43 locally-funded projects, while the rest is for six foreign-assisted projects.

For the year in review, a total of 17,564 hectares of new areas have been generated, 81,468 hectares rehabilitated, and 16,043 hectares restored.⁶⁷ NIA also operates and maintains 212 national irrigation systems (NIS) with a total service area of 783,457 hectares. The total irrigated area was 1,135,650 hectares broken down as follows: 566,006 hectares during the wet season; 553,396 hectares during the dry season; and 16,248 hectares for the third cropping/ratooning. Cropping intensity reached 170 percent.⁶⁸

3.4 Improving Market Access

Productivity of our farmers and

fisherfolk must also be fundamentally propped up against enhanced market access and capacity for entrepreneurial aptitude. To this end, the Department has carried out support to market services with other government agencies and the private sector.

We continue to market agri-fishery products through trade fairs and exhibits. For 2011, DA participated in 17 international events and 26 locally-held food promotions all aimed at increasing market for products of small and medium enterprises. We have invested around Php 38.39 million in these activities and have generated total sales of USD 108.5 million. Of this amount, USD 107 million were actual sales booked while USD 1.50 million were sales under negotiation.⁶⁹

Our agricultural exports have penetrated the markets of the United States, Japan, China, Hong Kong, Singapore, Malaysia, South Korea, Middle East and the Gulf Region, and parts of the EU markets. Best-sellers range from fruits/processed fruits such as Cavendish, pineapples, mangoes, and papaya, dried fruits, fruit juices, dessicated coconut (considered one of the most famous bakery ingredients in the world), marine products such as tuna and its by-products, squids, and mollusks.⁷⁰

We have also made headway towards promoting new products – particularly those catering to health-conscious consumers – such as coconut water, muscovado sugar, and organic coffee.⁷¹

The Department has also maintained rigorous market linkages and market-matching activities in order to assist our agriculture and fishery producers in entering into lucrative agreements with different buyers. For 2011, the total value of consummated agreements monitored amounted to Php 4.9 million. Export market linkages, meanwhile, are currently under negotiation with buyers from Japan



and Singapore (for vegetables) and Dubai (for frozen pork choice cuts). Several samples of tropical and semi-temperate vegetables were already sent to Japan and Singapore.⁷²

Back-to-back with trade fairs and exhibits are the promotions of agribusiness investments both local and abroad. On May 19-21, 2011, DA participated in the Korea Overseas Investment Fair (KOIF), the first large-scale forum organized by the Korean Government. We were able to bring around Php 35 billion worth of investments to Seoul – including investments in our mariculture parks and bioethanol. And as an offshoot to the KOIF participation, we have assisted Korean investors who visited the country on July 12-14, 2011 in finding areas for corn and bean production in Isabela. Moreover, around 65 Korean investors attended the Philippine Investment Seminar, proof that the Philippines remains among their priority investment destinations.⁷³

3.5 Bolstering Agricultural Enterprises Through Credit and Insurance

We have strengthened lending to small farmers and fishers under the Agro-Industry Modernization Credit and Financing Program

(AMCFP) through the Cooperative Banks Agricultural Lending Program (CBAP) which provide loans at reasonable interest rates to end-borrowers.⁷⁴

A total of Php 412 million in loans was released to 23,317 small farmers and fisherfolk under the AMCFP lending facilities, namely: (1) CBAP; (2) Agricultural Microfinance Program (AMP); (3) Agri-Fishery Microfinance Program (AFMP); (4) Fisheries Financing Program (FFP); and (5) Tomato Production and Paste Processing System Project (Tomato Project).

CBAP, an innovation in credit delivery, was introduced in September 2011 designed to employ a depository credit delivery system wherein special time deposits (STDs) are placed directly in partner cooperative banks, eliminating the need for a wholesaler and thus reducing interest rates to small farmers and fisherfolk. The interest rate of cooperative banks to small farmers and fisherfolk-borrowers should not exceed 15 percent per annum, inclusive of interest rate, crop insurance premium, and/or guarantee fee.

To date, a total of Php 333 million in special time deposit-placements were released to 12 cooperative banks. With barely three months of implementation, these cooperative banks have already released a total

of Php 178 million in loans to 2,776 farmers and fishers-borrowers.

We have also shored up on providing assistance to select farmer organizations and cooperatives with the Direct Market Linkage Development Program (DMLDP), a collaborative innovation between ACPC and the Agricultural Marketing Assistance Service (AMAS) which funds the program.⁷⁵ It is designed to provide funding for any activity or project within the agricultural supply chain, with beneficiaries comprising of operators of food terminals/trading centers, and consumer groups engaged in production, marketing, and processing of agricultural commodities.

This program also offers capacity development to improve and strengthen organizational management and business development of some of its farmer-beneficiary groups, providing them an environment to increase their incomes and post competitive prices for their consumers. This is currently being implemented in priority areas of the Department such as Nueva Vizcaya, Tarlac, Laguna, Batangas, CARAGA, Negros Occidental, and Iloilo.⁷⁶

Already, a total of Php 43 million in loans were granted to 16 farmer and fisherfolk cooperatives, organizations, and microfinance institutions in 2011, benefitting more than 10,000 farmers and fisherfolk. Projects financed include palay production, fruits and vegetable production, agri-crops trading, meat processing and trading, and establishment of greenhouses.⁷⁷

We have assisted our farmers in recovering from crops losses arising from natural calamities such as typhoons, floods, drought and other natural disasters as well as plant diseases and pest infestation through indemnity payments. For the twin typhoons *Pedring* and *Quiel* that hit Northern Luzon, CALABARZON, MIMAROPA and, Bicol Region areas on September

26-27, 2011 and October 1-2, 2011 respectively, the Philippine Crop Insurance Corporation (PCIC) paid Php 213.808 million of crop insurance claims to 23,144 rice and corn farmers covering 35,236.88 hectares. Overall, PCIC have provided insurance protection to a total of Php 6,592,804,000-worth of farm investments and have paid claims in 2011 amounting to Php 401,346,000.

Moreover, the Philippine Crop Insurance Corporation (PCIC) has posted the following accomplishments in 2011: 186,868 farmers insured; 184,925.57 hectares of area covered; and a total of Php401.346 million worth of claims payments made.⁷⁸

3.6 Forging Public-Private Partnerships

To further advocate the efficient implementation of government initiatives, alongside the economical use of limited funds, the Department of Agriculture remains committed to fostering collaborations with the private sector. Under the Public-Private Partnerships (PPP) scheme, the following projects have begun to take off:⁷⁹

Establishment of Cold-Chain Systems Covering Strategic Areas in the Philippines - Cold-Chain systems in four major routes nationwide with priority to the Benguet-Manila route.

This has been approved for the National Economic and Development Authority (NEDA)-PPP Center's Project Development and Monitoring Fund (PDMF) assistance. The Pricewaterhouse Coopers Services LLP (PwC) was chosen as the Transaction Advisor in charge of preparing the feasibility study for this subject, the submission of which to NEDA for ICC approval is set for July 2012.

Grains (Corn) Bulk-Handling & Trans-Shipment System Project – Fourteen (14) Post-harvest/Trading Centers and seven trans-shipment centers

We have engaged the Land Bank of the Philippines (LBP), together with the International Finance Corporation (IFC), as the transaction advisor, with the feasibility study to be submitted to NEDA on August 2012.

Logistics Support on the Agri-Fishery Products Supply Chain Using the South Rail Main Line - Rail transport of agricultural products from Bicol to Manila and back. The approval for this project has been deferred as the Philippine National Railways (PNR) and the Department of Transportation and Communication (DOTC) are awaiting the results of a pre-feasibility study that will guide them in preparing a letter of commitment as required by the PPP Center. This letter of commitment will delineate the provision of financial



counterpart from PNR/DOTC, as well as their active roles during project implementation.

Jalaur River Multipurpose Project Stage II (JRMP-II) - Irrigation with hydro-power generation and domestic water supply JRMP-II, funded by the Korea Economic Development Cooperation Fund (EDCF) under the Export-Import Bank of Korea (KEXIM), is being packaged into two phases: (1) construction of the dam and irrigation facilities; and (2) construction of the power component, and the operation and maintenance of the dam, irrigation, and power components. Phase 2 will be implemented under a PPP scheme. The conduct of a pre-feasibility study is scheduled in 2012.

Balog-Balog Multipurpose Project Phase II - Irrigation with hydro-power generation. As with JRMP-II, this project is being designed into two phases: (1) construction of the dam and irrigation facilities – to be funded under local funds; and (2) construction of the power component, and operations and maintenance of the dam, irrigation, and power components – also to be implemented under a PPP scheme. A pre-feasibility study for this project is set to be conducted in 2012.

Kabulnan-2 Multi-Purpose Irrigation and Power Project - Hydro-power generation with irrigation and domestic water supply.

A pre-feasibility study for possible PPP implementation of this project is also intended to be conducted in 2012.

Strengthening the Coffee Industry. During the 1st Philippine Coffee Investors' Forum on March 9, 2011, the DA has committed to earmark an initial Php 50 million to support the country's coffee sector for 10 priority regions, where farmers are targeted to be provided with over one million coffee planting materials. Small farm equipment and machinery like sprayers,



screen houses, nurseries, and a planting materials laboratory are set to be presented to beneficiaries, alongside construction of organic or biological fertilizer plants and bio-control agent plants.

Construction of small farm reservoirs and alternative irrigation systems that integrate hydro and solar technology were also committed by the Department.

The Land Bank of the Philippines and Banco de Oro, meanwhile, are prepared to fund new coffee plantations and rehabilitate existing coffee areas to boost the industry in the country. BDO is open to individual borrowers who can comply with all the bank requirements for securing their ability to repay the loan.⁸⁰

A notable accomplishment arising from this investment promotion was the distribution of about 1.8 million coffee seedlings to interested parties.⁸¹

Infusing vitality into the Fiber Industry through aggressive promotional activities in the domestic and international communities, as we take advantage of increased market demand for abaca. Market linkages between suppliers and buyers of raw fibers, semi-processed and manufactured products, and organized series of industry meetings and dialogues addressing urgent issues besetting the fiber industry were facilitated.

Participation in the following

international and local trade fairs and exhibits⁸² paved the way for entrepreneurs assisted by the Fiber Industry Development Authority (FIDA) – particularly the livelihood training beneficiaries – to find new markets for their products:

International events:

- 8th China-ASEAN Exposition (CAEXPO), October 21-26, 2011 in Nanning, China;
- Manila F.A.M.E. International Show, October 16-19, 2011 at the SMX Convention Center, SM Mall of Asia, Pasay City, Philippines;
- Tokyo International Gift Show (TIGS), September 6-9, 2011, Tokyo, Japan; and
- First International Agriculture and Tourism Expo, June 29-July 2, 2011 at the World Trade Center, Pasay City, Philippines.

Showcased were arrays of world-class and unique fiber products in terms of functionality and artistry, consisting of housewares, home furnishings, and fashion accessories highlighting the distinctly Philippine woven fabrics made from abaca piña fiber and Philippine silk.

Furthermore, fashionable collections, apparels, and hats made from our own hand-woven piña-seda (silk) fabrics from Aklan were created by Ms. Lilia Yip, an international fashion designer based in the United Kingdom, after having been presented with Philippine hand-woven fabrics.



These efforts, which were undertaken in partnership with the Center for International Trade Exposition and Mission (CITEM) of the Department of Trade and Industry (DTI) and the British Council, encouraged the continued presence of our products in the international arena. For the domestic scene, we have actively participated in the following events:⁸³

- "WOW... Hanep Buhay ng Pinoy," October 27-30, 2011 at the World Trade Center, Pasay City in partnership with the Philippine Chamber of Handicraft Industries, Inc. (PCHI) wherein products of our livelihood training beneficiaries were put on sale;
- "LikhangHabi": A Filipino Textile Fair, October 22-23, 2011 at the Power Plant Mall, Rockwell Center, Makati City. This event, organized by the HABI: The Philippine Textile Council, Inc., featured hand-woven fabrics made from indigenous fibers;
- Staging of the "Habi at Gawa 2011" Fashion Show, June 15, 2011 at the SM Megatrade Hall, Mandaluyong City during the 1st Agrikultura Trade Fair. This was a collaborative undertaking of the Department of Agrarian Reform (DAR) and the Department of Environment and Natural

Resources (DENR) as part of the DA-DAR-DENR National Convergence Initiative.

In addition, we have participated in the meeting-workshop of the project, "Growing Together – Future Forum 2020" in Kuala Lumpur, Malaysia organized by the International Natural Fibers Organization (INFO), of which the Philippines is a member.

Attendance was also made to the 8th International Conference of the European Industrial Hemp Association held in Wesseling, Germany. This paved the way for recognition and consideration of abaca as raw material for bio-composites. Consequently, experts from Germany, through FIDA's invitation, came to the Philippines and met with members of the academe and the private sector where they took the opportunity to present their interest to undertake a collaborative research on product development focusing on bio-composites. Promisingly enough, some private entrepreneurs expressed interest to conduct research and development with FIDA in order to integrate abaca with their existing products or develop new ones with abaca component in adherence to the current global advocacy on "going natural, going green."

Establishment of a Multi-Species Finfish Hatchery in Unisan, Quezon,⁸⁴ designed to offset production losses from the regulation set forth by Section 15 of RA 8550 which limits 10 percent of surface area for aquaculture. As this would mean a significant decline in fish production in the major freshwater lakes in CALABARZON, such as Laguna and Taal Lakes, Quezon was then identified as the one with the great potential to boost production. Mariculture zones in the municipalities of Padre Burgos, Perez, and Tagkawayan were established as additional production areas. And to support the fingerling requirements of these parks, the establishment of a multi-species finfish hatchery was proposed. Unlad Quezon Foundation has initiated the establishment of the hatchery in Unisan, Quezon and has spent around Php 30 million for infrastructure development. BFAR, in turn, will provide additional funding assistance in the form of equipment, supplies, inputs, and manpower to initiate and maintain said facility.

A Memorandum of Agreement was signed last November 15, 2011 stipulating the commitment of BFAR to provide the sum of Php 14.3 million. Meanwhile, spawning tanks, chlorella tanks, rotifer tanks, larval rearing tanks, and crab tanks are in various stages of completion.

*Developing a "Salad Bowl" in Leyte.*⁸⁵ A 20,000-hectare area at Tongonan mountain range, which straddles Ormoc City and the municipality of Kananga in Leyte will be transformed into a "salad bowl" that will grow high-value semi-temperate vegetables. This five-year initiative of the DA, called the Agri-Pinoy Integrated and Diversified Program for the Development of the "OK" (Ormoc and Kananga) Upland Range, in partnership with the Philippine National Oil Company-Energy Development Corporation (PNOC-EDC), the Visayas State University (VSU), and the Partners Multi-

Purpose Cooperative (PMPC), seeks to promote the production of other fruit crops like durian, rambutan, and jackfruit, as well as coffee and abaca to add to the usual crops that farmers in the area produce like cabbage, green onion, tomato, eggplant, radish, chayote, cucumber, and pineapple.

The Memorandum of Agreement signed on December 12, 2011 calls for the implementation of this Program for the "OK" Upland Range which is located 500 to 800 meters above sea level.

The DA and EDC will jointly invest Php 92 million in the next five years to develop suitable areas surrounding the Leyte Geothermal Production Field (LGPF) to benefit 5,600 farmers who are members of 23 farmers' associations in Ormoc and in Kananga. Ultimately, this project will not only uplift the 3,000 or so subsistence farm-families in the area but also transform them into entrepreneurs.

In addition, the National Agribusiness Corporation (NABCOR), together with DA Region VIII, will assist in the land preparation, cultivation, harvesting, processing, and marketing of vegetables and other high-value commercial crops.



NABCOR will also contribute Php 29 million to establish a consolidation center and pilot packaging house to provide marketing support.

PNOC-EDC, meanwhile, will also provide a total of Php 50 million to finance farming activities, at Php 10 million every year from 2012 to 2016.

3.7 Promoting Investments in Agriculture

The DA is also working closely with

the Board of Investments (BOI), DTI, and the Philippine Economic Zone Authority (PEZA) to rigorously promote large-scale investments in the Philippine agri-sector within the Philippine Investment Priority Plan. Through the DA-Philippine Agricultural Development and Commercial Corporation (PADCC), we prioritize projects that promote the food security thrust of the Philippines, with the majority of the foreign investments in the Philippines geared towards the needs of the local market.

For 2011, we have successfully assisted companies that want to invest in high-value crops, corn, coconut, and sugarcane.⁸⁶

Multi-Industry Clusters (MIC)

The MIC is programmed to contribute to economic development, including increase of rural incomes, generation of employment, promotion of food security, and alleviation of rural poverty in the Philippines through the establishment of agro-based industries, renewable energy, and other eco-tourism industries.

Under the MIC, 10,000 hectares for agricultural farming and 100 ha for an agro-industrial zone for three sites are to be developed. For 2011, a total of 10,100 hectares





each for the provinces of Isabela, Quirino, and Misamis Oriental were identified, as well as a feasibility study grant from KOICA of USD 1.1 M or Php48.4 million. Claveria, Misamis Oriental is the chosen pilot site for the project. There are about 10,000 jobs per site that are expected to be generated for agriculture, while 1,700 jobs are expected to be generated in the Misamis Oriental industrial zone.

As of December 2011, the signing of the Memorandum of Understanding (MOU) for the joint promotion of the MIC was made, while 915 hectares have already been set aside for initial development of agricultural lands for 2012. The Korea Rural Community Corporation, meanwhile, has released USD 850,000 for a grain processing facility in Malagana, Claveria, Misamis Oriental.

Nestlé Coffee Convergence

This is a joint technical and commercial cooperation and scientific exchange program that encompass projects for the development of green coffee production and marketing, expansion/development of areas for new coffee plantings, rehabilitation of coffee farms, establishment of coffee gardens and nurseries, and tissue culture centers.

In November 2011, a Memorandum of Agreement was entered into by and between the National Convergence Initiative (NCI) and the Nestlé Philippines, Inc. (NPI).

Establishment of three Integrated Coffee Techno-Demonstration Farm Centers is expected – one each for Luzon, Visayas, and Mindanao.

KOREA Corn Stover-to-Paper Project

CPNP Holdings, a Korean pulp and paper manufacturer, has invested a USD 100 million-worth of factory to be set-up on a 50-hectare land in Cauayan, Isabela which will be producing paper products from corn. The production capacity of the plant will be 40,000 MT of pulp a year, utilizing 150,000 MT of corn stalks from Isabela's corn farms. The said manufacturing facility will be adopting environment-friendly practices in its operations since it will be using corn by-products – specifically corn stalks. This is a step-up from the traditional pulp and paper manufacturing operations that utilize wood chips from trees. Said investment is expected to

generate direct employment for more than 500 people, particularly corn farmers. The MOU between CPNP and the Province of Isabela was signed last May 2011, and the project is currently in the 5th stage of negotiations with farmer groups.

AgriNurture, Inc. - Coco Water Project

Vita Coco has partnered with AgriNurture, Inc. (ANI) in the Philippines to build a new coconut juice production facility in Pili, Camarines Sur. The said facility has the capacity to produce 10,000 liters of coconut juice per hour (160,000 liters per day from a 16-hour operation) from 582,000 ripe coconuts per day (or 36,375 coconuts per hour).

A groundbreaking ceremony at the site of the new facility was held last September 29, 2011. Expected from this project are the USD 8 million



per year-worth of income to be generated by the farmers, as well as the development of 20,000 hectares of new land for coconut. The facility is now being constructed.

Green Futures Innovation

This is for the development of 11,000 hectares for sugarcane plantation for bioethanol production (150 million liters). Investments for land development will be Php1 billion, while the processing site will be Php5 billion for two years. PADCC has facilitated the coordination with DENR for the conduct of land identification and consolidation of 1,500 hectares for the first phase in San Mariano, Isabela, while consultations have been made with the San Mariano LGU for the conduct of ground survey. The land development of the 11,000 hectares for sugarcane production is expected to generate at least 11,000 jobs.

The plantation is expected to commence production of ethanol by June 2012.

3.8 Supporting Local Development through Convergence Initiatives

We are delivering relevant services better and through improved channels as we take on the convergence initiative with DAR and DENR, doing away with fragmented and unsynchronized approaches that stem from functional overlaps.

For 2011, the convergence initiative has taken up more concrete actions towards joint planning and implementation among the three rural development agencies and the local government units.

The National Greening Program (NGP), launched on May 13, 2011, is a major undertaking arising from Executive Order No. 26, signed by President Aquino on February 24, 2011. The EO aims to capacitate the

collective efforts of the three national agencies towards reinvigorating our country's forest cover so that, from 2011 to 2016, 1.5 billion trees would have been planted, transforming (or "greening") 1.5 million hectares of public lands. Simultaneously, the NGP as a national priority would be used to address poverty and hunger, promote food security, environmental stability and biodiversity conservation, and enhance climate change adaptation. Also developed was the concept of pilot-testing of environmental conditional cash transfers (eCCT) in support of the NGP, where about 200 upland and fisherfolk families in Southern Leyte are expected to benefit.⁸⁷

Meanwhile, the Local Agro-Enterprise Cluster Model piloted in the municipality of Javier, Leyte and the province of Northern Samar, have accomplished the following for the year:⁸⁸

For Leyte- (1) establishment of a trading center; (2) distribution of ginger, abaca, and jackfruit planting materials; (3) site validation and techno-demo area establishment for jackfruit, abaca, hybrid rice and coconut; (4) soil fertility mapping; (5) pasture development; (6) registration of farmers with the National Farmers' Registry System (NFRS); (7) construction of a small-scale irrigation project and composting facility; and (8) ongoing road concreting and rehabilitation of

irrigation facilities.

BFAR and the German Society for Technical Cooperation (GIZ) assisted in the creation of the Alliance of Fisheries and Aquatic Management Development Council for the area, while the Agrarian Reform Community Program (ARCP) was implemented alongside the NGP and the Bito Watershed Rehabilitation and Development, and Rattan Plantation Projects.

For Northern Samar, interventions comprise of: (1) road rehabilitation; (2) paddy dike development; (3) conduct of training sessions on upland rice and (4) establishment of techno-demo areas for rice; (5) distribution of light traps and metarhizium for rice black bug control; (6) provision of shallow tube wells; (7) conduct of Community-Based Participatory Action Research on Rice-based Farming Systems; (8) construction of the Bugko and Bobon Irrigation Projects; (9) establishment of a coconut nursery; (10) distribution of abaca plantlets and (11) establishment of an abaca stripping center with mobile spindle stripping machine and abaca solar dryers.

DAR has conducted an orientation and hands-on training on banana production and distributed banana plantlets to farmer-beneficiaries, while DENR's NGP produced thousands of fruit trees and



premium tree species to be planted in identified mountains and idle lands of the province.

In Quezon, an investment is being laid down for an initial Php 148 million to transform three of its coastal towns (*Real, Infanta, and General Nakar*, collectively known as “REINA”) into a modern agro-enterprise cluster.⁸⁹ For DA’s part, a total of Php 77 million is slated for agriculture and fishery projects, including a Php 50 million modern fish port and agri-trading complex in Infanta. DAR will construct a Php 66 million bridge in General Nakar, while the DENR will focus on the Kanan watershed management project in Infanta.

DA has further committed to develop and expand abaca areas, set up abaca nurseries, conduct institutional credit capability-building seminars, provide technical assistance in organic agriculture and agro-forestry, and provide REINA farmers and fishers crop and fishery insurance coverage. For Isabela, the country’s major grains bowl, an agreement was signed on February 16 between the provincial government and the National Convergence Initiative to attract Filipino and foreign firms to invest in post-harvest facilities – ranging from mechanical dryers to grain storage and silo –initially estimated at Php 2.25 billion that would cover 30,000 hectares. This activity is supportive of government’s goal to attain food security and rice self-sufficiency by 2013. The agreement will facilitate and spur the flow of investments by offering tax holidays, duty-free importation of post-harvest equipment, and easing up on local regulations and taxes.⁹⁰

Meanwhile, the roundtable discussions on land investments and agribusiness with PEZA, DTI, and the BOI have been completed and the crafting of the Unified Guidelines on Agribusiness Investment now ongoing. The guidelines will provide avenues for the processing of applications for joint-venture agreements and

other agribusiness partnership schemes geared towards optimizing economies of scale in agricultural production, capacity development, as well as opening doors for marketing and agricultural produce, while also promoting security of tenure and income of farmers.⁹¹

A Joint Administrative Order has also been issued on the reversion of abandoned, underdeveloped, and underutilized areas (AUUs) released to BFAR into mangroves for fishpond development.⁹²

3.9 *Eradicating Poverty & Promoting Just and Lasting Peace Through Local Community-Based Growth*

Peace and development efforts were continuously supported by the Department through the implementation of 10 locally-funded projects in Mindanao in 2011 (*Table 4*):

TABLE 4
List of Locally-Funded Projects as of 2011

Project Name	Coverage
Basilan Accelerated Peace and Development Strategy (BAPADS)	Basilan
CARAGA Integrated Development Program	Region XIII



Davao Integrated Development Program (DIDP)
Region XI

Household Enhancement and Livelihood Program for Muslim Communities (HELPMC)
Maguindanao

and Lanao del Sur
Iranun Sustainable Integrated Area Development Program (ISIADP)
Maguindanao Prov.

Metro Kutawato Development Alliance (MKDA)
Cotabato City

& Maguindanao Prov.
Mindanao North Coast Integrated Area Development Program (MinCIADP)

Pagkain Para sa Masa (PPSM)
Mindanao-wide

SOCCKSARGEN Integrated Food Security Program
Region XII

Zamboanga Peninsula Integrated Agricultural Development Program (ZIADP)
Region IX

These projects provided farmer groups, LGUs, and other beneficiaries with the following interventions:

- Distributed 8,888 pieces of planting materials, 8,110 packs of assorted seeds, 468 head of animals, 330 bags of fertilizer, 40,000 pieces of bagging

materials, and 100,000 pieces of Tilapia fingerlings.

- Established one (1) budwood garden and 121 technology demonstrations.
- Conducted six (6) different training and training-related events with 487 farmer/fisher participants.
- Established a small water impounding project in Buena Vista, Zamboanga City.
- Established a greenhouse in Dipolog City and a tissue culture laboratory in Western Mindanao State University, San Ramon, Zamboanga City.
- Upgraded/maintained six production research facilities.
- Constructed/rehabilitated 13.7 km of farm-to-market roads and 21 km of bridge.
- Disseminated 3,540 copies of IEC materials.

Aside from locally-funded projects in Mindanao, other projects, such as farm-to-market roads (implemented in coordination with the DPWH), Young Farmers Program (YFP), 4-H Club Program, Support to Poverty Eradication, Empowerment and Development (SPEED), and Casecnan Social Measures Project were implemented nationwide. For the year in review, these projects: (i) constructed 37 sites of FMR projects in Region II; and (ii) conducted 11 training activities. In addition, 4-H club members were provided with assistance such as study grants, farm family fora, technical support in the development of livelihood or enterprise development project proposals, and financial assistance to establish agri-based livelihood projects in their communities.

For 2011, a total of 49 foreign-assisted projects were implemented by the Department of Agriculture (Table 5). Twenty-one of these are loans, while twenty-eight are grants. The KOICA, Food & Agriculture Organization (FAO), the Spanish Government, the European Union, 2KR, and the China RMB Yuan provided grant-assistance funds. Meanwhile, the China Financing Facility, the Asian Development Bank (ADB), CAMC, JBIC, US PL 480, IFAD, and the World Bank have provided funds for loan-assisted projects.



TABLE 5
List of Foreign-Assisted Projects (as of 2011)

Program/ Project	Funding Agency
LOAN	
Infrastructure for Rural Productivity Enhancement Sector Project (<i>InfRES</i>)	Asian Development Bank
Mindanao Rural Development Program (<i>MRDP</i>) - APL2	World Bank
Cordillera Highland Agricultural Resource Management Project - Phase 2 (<i>CHARMP II</i>)	OFID & IFAD
Rapid Food Production Enhancement Program (<i>RaFPEP</i>)	IFAD & EU
Strengthening Capacities in Agricultural Policy and Trade Negotiations and Agreements (<i>SCAFTN</i>)	US PL 480
Expanded Human Resource Development Program (<i>EHRDP</i>)	US PL 480
Goat Production Project for the Accelerated Hunger-Mitigation Program	US PL 480
Accelerating the Genetic Resource Improvement Program for Beef Cattle and Small Ruminants	US PL 480
Philippine Agriculture and Fisheries Biotechnology Program	US PL 480
Improving Enforcement Capability in Fishery and Coastal Resource Management	US PL 480
Multi-Year Animal Procurement and Breeding Program to Upscale Heifer Production for the Local Dairy Industry	US PL 480
Milk Feed Plus	US PL 480
Strengthening the Livestock Biotechnology Center	US PL 480
Enhancing the Implementation of IPM to Improve Farmer Competitiveness, Minimize Environmental Risks, and Ensure Food Security and Safety	US PL 480
Support to Emergency and Livelihood Assistance Program (<i>SELAP</i>) / Livelihood Enhancement and Peace (<i>LEAP</i>)	US PL 480
Establishment of Agro-Meteorological Stations in Highly-Vulnerable Agricultural Areas: A Tool for Climate Change Adaptation and in the Development of Local Early Warning System (Agromet-cum-Climate Change)	US PL 480
Agno River Integrated Irrigation Project	China Exim Bank
Help for Catubig Agricultural Advancement Project	JBIC
Participatory Irrigation Development Project	IBRD/World Bank
Banaoang Pump Irrigation Project	CAMC
Southern Philippines Irrigation Sector Project	Asian Development Bank
GRANT	
Philippine Sino - Center for Agricultural Technology 2(<i>PhilSCAT 2</i>)	China - RMB Yuan
Regional Fisheries Livelihood Program (<i>RFLP</i>)	Spain Embassy
Regional Freshwater Fisheries Centers: Continuing Capability-Building for Integrated Development of Bicol Freshwater Fisheries	2KR
Enhancing Farmers' Capacity to Access, Analyze, and Utilize Statistical Information	2KR

TABLE 5 (con't.)
List of Foreign-Assisted Projects (as of 2011)

GRANT

Rehabilitation and Modernization of Livestock "Oksyon" Markets (LOM) in the Philippines	2KR
AKBay Agrikultura: Kaagapay ng Bayang Pinoy Program	2KR
Rehabilitation of Small-Scale Irrigation Projects for Upland Productivity and Resources Sustainability	2KR
Fisheries Grassroots Outreach Projects	2KR
Enhancing Rural Employment through Promotion of Village-based Dairy Enterprise	2KR
Technology Management for Competitive Agricultural and Fisheries Sector	2KR
Strengthening Philippines' Institutional Capacity to Adapt to Climate Change	UNDP/FAO
Strengthening Capacities for Climate Change Risk Management & Disaster- Preparedness in Selected Provinces in the Philippines	FAO
Philippine Climate Change Adaptation Project	World Bank/FAO
Increasing Rice Yields and Productivity through the Promotion of Small-Scale Irrigation and Integrated Crop Management Systems in Rainfed Areas	FAO/EU
Trade-Related Technical Assistance Project (<i>TRTA 2</i>)	EU
Immediate Agricultural Assistance to Flood-Affected Farming Communities due to Tropical Storm Ketsana and Typhoon Parma in Region I and CAR and Support to the Agriculture Emergency and Rehabilitation Coordination	FAO/SPANISH
Immediate Restoration of Food Security in Flood-Affected Region IV-A (CALABARZON) through the Provision of Agriculture & Fisheries Inputs and Technical Support	FAO/SPANISH
Korean Project on International Agricultural (<i>KOIPA</i>) in the Philippines	KOICA
Mindanao Sustainable Organic Farming Technology (<i>MinSOFT</i>)/Mindanao Sustainable Organic Farming System	AFACI/KOREA
Evaluation and Adoption of Improved Farming Practices on Soil and Water Resources, Bohol, Philippines	ACIAR
Development of Environment-Friendly Agricultural Production Technology in Small Islands	JIRCAS
Cocoa Coconut Palayamanan Project	USDA
Philippine Climate Change Adaptation Project (<i>PhilCCAP</i>)	World Bank
Increasing Rice Supply in Regions VIII and X by Improving Farmers' Capability through Technical Assistance Trainings and Demo of Rice Production Technologies-cum-Small-Scale Irrigation Facilities	FAO
Environment and Rural Development Program (<i>EnRDP</i>)	GIZ
National Capability-Building for Land Degradation Assessment and Climate Change Adaptation	FAO
Watershed Evaluation for Sustainable Use of Sloping Agricultural Land in Southern Philippines	ACIAR
Establishment of Modern Rice Processing Complex in Four Provinces in the Philippines (RPC)	KOICA
Enhancing Livestock Sector Performance in the Philippines	KOICA

Under these projects, the following services were provided to different beneficiaries during the year⁹³

- Constructed/rehabilitated 304.7 km of farm-to-market roads;
- Constructed five (5) units of potable water supply;
- Developed 39.81 hectares of agro-forestry areas;
- Distributed 392,681 bags of certified seeds;
- Procured 6,270 bags of certified seeds for buffer stocking or distribution to farmers adversely affected by unforeseen climatic events;
- Completed one (1) rice processing complex with complete facilities and equipment in Sta. Barbara, Pangasinan;
- Conducted 40 agro-forestry farmers' field school and 10 farmers' field school;
- Conducted 13 techno-demos; and
- Conducted 37 training courses on construction and livelihood projects.

3.10 Good Governance and Transparency in Service

Not just delivering results, but upholding the code of good governance and accountability.

Eliminating the Department of Agriculture from among the most-corrupt agencies in the Philippines⁹⁴ was just a prelude to the commitment forged under the new administration for greater transparency and responsibility in implementing enhanced services to our clients.

Compliant to the directives from President Aquino, operating units under the Department have sought to ensure that incidences of influence-peddling, patronage politics, stealing, bribery, profligacy, and other forms of corruption are

prevented, if not eliminated. Instilling integrity back into the civil service profession means starting from within our own ranks.

We maintain proper procurement practices while ensuring that we secure quotations that are most cost-efficient and advantageous to the government. Energy-saving measures also continue to go hand-in-hand with the practice of utilizing our own DA offices for meetings, workshops, and training courses, as well as being frugal and accountable in official travels.

Meanwhile, in order to facilitate implementation of policies, directives, and program strategies, attendees of meetings are tasked to submit a feedback report highlighting salient issues raised and agreements reached.

Cross-posting of officers is also being enforced in a number of our divisions to inhibit patronage politics while also giving them opportunities to be effective in other facets of the organization.

We also continuously articulate the principles of the Citizen's Charter through the provision of accessible information on the technologies and services being offered by our agencies, as well as avenues by which our clients can lodge grievances or suggestions.

3.11 Amplifying the Role of Women in Agriculture

Our goal of food staples sufficiency, aside from being implemented by our banner programs and other DA projects, also work within the framework of the long-term Philippine Plan for Gender-Responsive Development (PPGD), as well as the medium-term Millennium Development Goals (MDGs) and Framework Plan for Women (FPW) to ensure equality between men and women, and to achieve gender-responsive governance.

We continue to provide technical and skills training with a gendered perspective to rural women leaders, farmers and fisherfolk, and LGU

agricultural extension workers through the Agricultural Training Institute (ATI) and the Regional Field Units. Moreover, researches being undertaken by the Bureau of Agricultural Research (BAR) remain gender sensitive. Training and research modules strive to integrate gender-responsive concerns to guide the design and implementation of agricultural projects and technologies.

In upholding the right to health of women and their family, we continue to promote organic or natural farming by training women to use bio-control agents instead of chemicals to mitigate the spread of pests and diseases. Aside from protecting pregnant and lactating mothers from harmful chemicals, going organic also diminishes the household burden of medical expenses and time spent by women in caring for sick family members.

Furthermore, **we have enriched our milk feeding activities, benefitting 12,911 malnourished children** through the National Dairy Authority (NDA) which assists 19 milk processing plants that also aid the livelihood of 678 women dairy farmers. In addition, 761 women out of 2,012 dairy farmers were trained on milk production at the household/ domestic level.^{95,96}

3.12 In Pursuit of Innovations to Address Poverty and Climate Change

2011 also saw the renewed efforts by the Department to foster innovations to address poverty and climate change, while further cultivating sustainable farming practices.

Tapping landless rural workers as service providers⁹⁷

On December 12, 2011, the Department of Agriculture and the Department of Social Welfare and Development (DSWD) launched the *Agrikulturang Pantawid Pamilyang*

Pilipino in Las Navas, Northern Samar. The national launch comes after a partnership between the two agencies was forged in August 2011 to engage landless farmers under the DSWD's Cash-for-Work Program in paddy diking (the building of "pilapil" around farms) to allow these farms to benefit from the Catubig irrigation project.

From just four hectares of farms being served last August by an irrigation project that started 10 years ago, the service area with built-up paddy dikes increased to 303 hectares by December 2011. This was the result of the work of eight batches of workers with 50 farmers per batch. Farmers are grouped into teams of 10 persons and they work for 10 days for each hectare to build some 500 to 600 meters of "pilapil." Each batch undergoes training in paddy diking, with DA providing tools that the workers will use for the job. Seventeen more batches of 100 persons per batch are being prepared to work on 30 hectares per batch. The workers get paid for four days of training and for seven (7) days at work at Php219 per day. Altogether, the project will cover some 800 hectares that will create jobs for the landless rural workers and produce food for the province of Northern Samar.

The same workers who are building the paddies will also be trained and

organized into service provider groups that will eventually be hired to do other farm jobs – from paddy diking to plowing, replanting, harvesting, irrigation canal repair and desilting, and other labor-intensive farm activities.

The poverty-reduction strategy is to organize "skills-based" service provider groups who can be contracted for quality and competitively-priced farm services. Management and marketing will be important add-on components of these service groups to enable them to solicit enough jobs and sustain sufficient income for themselves.

We initiated the service provider scheme for coconut replanting and coconut fertilization, and for the repair and desilting of irrigation canals. Farmers will be engaged to undertake the Philippine Coconut Authority's coconut planting project that targets 138,125 farmers to replant the same number of hectares of coconut farms. Other farm laborers will also be tapped to do coconut fertilization while other coastal families will produce salt to be procured by the program to fertilize the coconut trees. The program is, likewise, linked with the DSWD Cash-for-Work Program.

Integrated Community-Based Multi-Species Hatchery and Aquasilvi Farming⁹⁸

The poverty of fisher families is often traced to declining catch, whether due to big commercial fishers or the sheer decline in fish population. An integrated and sustainable approach requires the restoration of mangrove areas that disappeared due to unsustainable fishing cages.

The *Integrated Community-Based Multi-Species Hatchery and Aquasilvi Farming* is the DA's banner program to address poverty among fisherfolk families and communities. The program achieves fisheries resource protection while expanding the number of self-sufficient fisher families. It involves aquasilviculture or a mangrove-friendly system of growing fish and other aquatic organisms in enclosed areas within the mangrove. The fisher families who are assigned a one-hectare area to engage in aquasilvi farming are also tasked to replant the mangroves.

To expand the project, 31 coastal areas throughout the country have been identified. On December 16, 2011, 40 institutional partners and BFAR signed a Memorandum of Agreement that will engage these institutions as project managers of community-based hatcheries that will supply fingerlings of various species to 11,700 fisher families who will undertake mangrove farming of 11,700 hectares located at these sites. Every hectare shall



be planted to 3,000 trees for which the fisher family gets paid a total of Php5.50 per mangrove tree (Php1.50 for the planting material, Php2 for planting and Php2 for every tree that survives) for an income of Php16,500 upon replanting and watching over the hectare of mangrove assigned to the family.

The restored mangrove area will become a growing area for fingerlings that will be supplied by the hatcheries. The families will be provided with netting material to enclose their area so that it becomes their own fishing ground. Canals within the mangrove area will be dug as growing sanctuaries for the fishes. Excess fishes may be set free into the wild to aid in boosting the fish population for other small fishers. Families will also have the choice whether to raise fish for food or for sale. They likewise have the option of consolidating their catch with other aquasilvi fishers.

Hence, while we invest in restoring the mangroves for a healthier growing area for the fishes, we are also providing fisher families with their own fishing ground and seeding the waters with new fishes grown in the restored mangroves.

For this project, the amount of Php280.8 million has been approved under the President's stimulus fund.

To include more fisher families, the module is being considered as part of other future agriculture projects. The processing and marketing components for these projects are in place in some areas.

Improving Delivery of Services to Target Beneficiaries

Service to the people necessitates not only carrying out interventions but ensuring that these are delivered to the right beneficiaries as warranted by their needs. With the Unified and Enterprise Geospatial Information Systems (UEGIS), we can integrate spatial and non-spatial information such as bio-physical resources, infrastructure, investments, and farmer information in order to ensure the equitable and timely distribution of interventions, improve the allocation and efficacy of resources from DA and partner institutions, address the challenges of climate change, increase our response time in providing emergency assistance to farmers and fisherfolk, and provide more accurate forecasting and markets for agriculture and fisheries production.

After piloting the National Farmers' Registry System (NFRS) in 2010 in three municipalities (Tarlac City, Tarlac; Dinalungan, Aurora; and San Isidro, Nueva Ecija), and the subsequent presentation of the

results with DA Regional and LGU staff from September-October 2010, we have rolled-out the NFRS on the top three most-representative provinces from Luzon, Visayas, and Mindanao that met the following criteria: (i) farm area (40%); and (ii) vulnerability to flood (20%), El Niño (20%), and landslide (20%). The chosen priority provinces, thus, were Quezon, Leyte, and Bukidnon.

Farmer registration in most of the municipalities in these three provinces began in May, June, and August 2011, respectively. By December 31, the number of registered farmers are as follows: Quezon - 70 percent of the 156,432 target farmers; Leyte - 62 percent of the target 157,463; and Bukidnon - 67 percent of the target 139,958.

We have, however, issued a Memorandum Order to discontinue the implementation of the NFRS in new provinces in light of the creation of the Registry System for Basic Sectors in Agriculture (RSBSA), a project spearheaded by the Department of Budget and Management (DBM) in collaboration with DILG, DA, DAR, and the National Statistics Office (NSO), with the signing of the Memorandum of Agreement by the heads of the participating agencies done last December 5, 2011. The key role of DA in this activity is to



provide assistance to the NSO in the technical aspects of the registration, as well as serve as technical resource persons during the conduct of training activities.

Promotion of Organic Agriculture (OA)⁹⁹

As a keen intent under the Aquino administration to shift Philippine agriculture from conventional to more ecologically-sound food production practices, Republic Act 10068 (or the Organic Agriculture Act of 2010) was crafted. Its implementing rules and regulations (IRR), approved in 31 January 2011 by the Congressional Oversight Committee on Agricultural and Fisheries Modernization (COCAFAM), promotes organic agriculture (OA) as a framework strategy that would guide the principles of the new Philippine Development Plan.

In line with this, the Department, through the Bureau of Soils and Water Management's (BSWM) Organic Fertilizer Production Project (OFPP), has implemented the Expanded Modified Rapid Composting (EMRC) scheme that will encourage our rice farmers to engage in balanced fertilization farming, since an abrupt shift from traditional to full organic agriculture causes lower crop yield. The project provides vermicompost and vermitea to rice farmers which is

more cost-efficient, sustainable, and in harmony with nature. By mainstreaming organic-based farming into the DA's sustainable agricultural program, small farmers are cushioned against the price spikes of chemical fertilizers.

In addition, the practices under EMRC are expected to improve and, in time, revive the fertility of the soil, lessen input expenses, and contribute to the goal of rice self-sufficiency by increasing rice production and other crop yield.

The DA first began promoting organic-based farming with a 50-50 ratio (organic-inorganic inputs) but is now implementing a 70-30 scheme until such time that organic agriculture is sustained.

For 2011, several areas have already been identified and validated to be the sites of EMRC production farms. The finalization of the Memorandum of Agreement and transfer of funds to identified cooperators were fast-tracked for immediate implementation of the said program. As of December 31, 2011, funds have already been transferred to 69 MRC farm clusters covering 6,900 hectares. Some 35 training sessions, workshops, and briefings on OA were also conducted during the year.

The establishment or upgrading of Trichoderma Production

Going organic with pili oil

Minda Yee of Sorsogon City was able to produce organic oil from pili pulp suitable for culinary purposes, salad dressing, shortening, canned sardines, and other food preparations. Found to be an anti-microbial and anti-inflammatory agent, it is effective in healing wounds and allergies. The oil produced has very low free fatty acid (FFA) control of 0.06%, favoring a longer shelf life. The results of the chemical and nutritional analysis of pili pulp compared with olive oil revealed that it has more beta carotene, a known Vitamin A source, and carotenoids, phytosterols and tocopherols (Vitamin E). These anti-oxidants protect cells from oxidation and neutralize unstable free radicals.

Laboratories were also prioritized under this program, and we have already transferred the funds to rice-producing provinces which have no existing Trichoderma Production Laboratories.

From Coconut Waste to Environment-Friendly By-Products¹⁰⁰

An exciting initiative by the DA, through the Philippine Coconut Authority (PCA), is pursuing conversion of coconut organic waste into high-value products that also benefit the environment. Coconut fibers or coir, aside from being transformed into twine, yarn, or material for mattresses, are also being developed into "cocomats" or geo-textiles that can be laid on mountain slopes, river banks, and dam embankments to serve as erosion-control material.

For every kilo of coconut husk, 300 grams of fiber can be extracted, with coco peat or dust as the vestigial component. The latter in itself is being developed as an organic fertilizer or "soil conditioner", as well as animal bedding.



Together, coco fiber and peat can potentially give millions of pesos in revenue to the government, with huge markets such as China, Hong Kong, Korea, Japan, Singapore, Taiwan, Canada, and the US waiting to be tapped. Six billion coconuts, for instance, collected for processing into geo-textiles and organic fertilizers could generate at least USD 225 million annually for the Philippines.

Pursuing this initiative through collaboration with the DTI, Department of Public Works and Highways (DPWH), Department of Science and Technology (DOST), small coconut farmers' cooperatives, and the private sector, will impel our frail coco fiber and peat industry to expand and achieve its fullest export potential.

impounding projects and 3,130 spring development;

- Distribute about 4,526 units of postharvest equipment and machineries such as dryers, storage and milling equipment,



and dairy equipment and machineries;

- Construct close to 2,777 postharvest facilities for drying, storage, processing and transport;
- Maintain 65 mariculture parks;
- Construct and rehabilitate a total of about 1,284 kilometers of farm-to-market roads under the foreign assisted and locally-

funded projects;

- Establish strategically-located trading centers such as Benguet, Pangasinan, Nueva Ecija, Negros Occidental, Bohol, and Quezon; and
- Implement the Aqua-silviculture Program.

We have already attained remarkable achievements under the new leadership in the Department and are motivated more than ever

IV. Sa



Asenso'y Tuloy-tuloy

More than forming part of the foundation of our communities and the sustenance of our people, our farmers and fisherfolk continue to be a source of inspiration amidst the view among many that agriculture and fisheries is not as glamorous as other trades. This attitude is wanting, as it completely neglects the fact that, without the production from agriculture and fisheries, our whole economy is for naught.

To create a critical mass of farmer-entrepreneurs and models in farming and fishing communities for their counterparts to emulate and follow suit, the DA spearheads the conduct of an annual contest, aptly called 'Gawad Saka,' in partnership with LGUs, academe and the private sector.

The annual contest, which started

in 1970, recognizes the outstanding accomplishments of farmers, fisherfolk, livestock raisers, farmers' and fisherfolk's groups, rural youth and women, and organizations, and their respective contributions to revitalizing their communities' agriculture and fishery sector.

To date, Gawad Saka features 22 individual and group categories. The contest starts at the municipal level, where winners vie for the best in their respective provinces and regions. Finally, the regional contenders compete for the national awards.

For the *Gawad Saka* 2009-2010, held on May 23, 2011, we have recognized 13 outstanding individuals and nine exceptional groups. For their feat, the 22 winners

received a total of Php 3.2 million in cash awards and agri-fishery project grants. They were led by 79-year old Efren Millare of San Juan, Abra, as the outstanding integrated rice farmer who integrated rice with vegetables while raising fish and livestock using the *Palayamanan* technology. From his 1.35-hectare integrated rice farm, he earned a gross income of Php 400,000 in 2010.

Each of the other 12 national *Gawad Saka* individual winners also received Php 100,000 cash, while the group winners received project grants, ranging from Php 150,000 to Php 350,000. All of them also received a Presidential Citation and *Gawad Saka* trophy.



V. Looking Ahead to 2012

The DA pursues the goals of the Philippine Development Plan (PDP) 2011-2016

The DA's programs are aligned with the three goals of the PDP's objective "towards a competitive and sustainable agriculture and fisheries sector," which are:

- (1) improved food security and increased rural incomes;
- (2) increased sector resilience to climate change impacts; and
- (3) enhanced policy environment governance.

Improved Food Security and Increased Rural Incomes

Sufficiency in food staples by 2013 is the goal under the DA's Food Staples Sufficiency Program (FSSP) that prescribes three program strategies: (1) raising productivity and competitiveness; (2) enhancing economic incentives and enabling mechanisms and (3) and managing food staples consumption. In carrying these out, major interventions such as the following have been laid out: front-loading investments in irrigation, agricultural mechanization, and postharvest systems, and

increased investment in research, development, and extension.

Strengthening irrigators' associations and other groups and establishing close collaboration with local government units and other organizations are essential elements of the FSSP. Various interventions such as farm mechanization, community seed banking, credit and extension are

designed to be implemented with strong participation from these groups.

Endeavors to expand the local and global markets for our livestock and poultry industry stand at an advantageous position as we currently hold an FMD-free status without vaccination and an Avian Flu-Free status. We will build on this reputation to further enhance



our livestock and poultry industry.

We will also continue to be vigilant towards strict monitoring and implementation of regulations, as well as providing means for upgrading postharvest, cold-chain, and training facilities.

Staying on the path towards attaining the full potential of high-value crops also occupies a high priority in the Department's activities in the coming year. The production of our traditional export commodities like coconut, sugar, abaca, banana, and pineapple will be revitalized. New markets, as well, will be opened up for organic vegetables, as shown by the linkage we are forming between farmers in the provinces of Quezon and Benguet with prospective buyers from Singapore.

To address the decline in fisheries, we aim to adopt a triple strategy of regeneration, protection, and sustainable production. Establishment of mariculture parks, nurseries, and hatcheries will be pursued.

Coastal Resource Management will also be promoted, together with the replanting of mangroves under the Integrated Community-Based Multi-Species Hatchery and Aquasilvi Farming Program.

Increased Sector Resilience to Climate Change Risks

The nation was still in the midst of its recovery from the back-to-back lashings of typhoons *Ondoy* and *Pepeng* in 2009, and typhoon *Juan* in 2010, when another massive devastation in 2011 came in the form of typhoons *Pedring* and *Quiel*.

The impact of such natural phenomena – and overall climate change – in the agriculture and fisheries sector cannot be understated.

Hence, the full integration of climate change adaptation measures in all programs and projects is being carried out. This entails designing a climate information system for agriculture and fisheries, research and development for adaptive tools, technologies, and practices, climate-resilient agriculture and fishery infrastructures, implementing regulations to ensure effectiveness and safety, and providing windows for financing and instruments for risk transfer (e.g. weather-based insurance).

Enhanced Policy Environment and Governance

With challenges posing a constant threat in our bid to serve our farmers and fisherfolk, alongside the more promising opportunities for heightened capacity-building,

we recognize the pressing need to foster partner-relationships with other government agencies.

In addition to its convergence with the DENR and DAR, the DA is currently working in convergence with the DPWH for flood control and water impounding. Another convergence approach with the DSWD has given rise to programs aimed at farm development and rural employment.

Policy Framework

The DA's general policy framework is derived from the Philippine Development Plan (2011-2016).

The results matrix has been laid out and we measure our achievements against those results. To ensure that we attain those results, we further itemize the major deliverables per agency. For example, at the NIA, we look at projects per system, per province, and check on hectares irrigated as well as areas planted. We have found that some irrigation projects in which billions have been spent remain unutilized because the farms are not ready to receive water. These are problems we discover on the ground and which we are able to address immediately.

The Agriculture and Fisheries Modernization Act (AFMA) of 1997 provides more detailed prescriptions



for the Department to execute including ensuring the quality of cross-cutting functions such as research, regulation, extension. The Department's Planning Service is currently spearheading the updating of the plans and programs under AFMA.

The Organic Agriculture Act of 2010 (R.A. 10068) supports sustainable resource management and contributes to climate change adaptation and disaster risk reduction.

The Philippine Fisheries Code of 1998 (R.A. 8550) guides the implementation of programs and projects to ensure the sustainability and welfare of our aquatic resources while contributing to the food security of Filipinos.

We also continuously implement our programs and services under the ideals of the *Agri-Pinoy* framework. Four principles and features of *Agri-Pinoy* guide the initiatives and interventions of the department: food security and self-sufficiency, sustainable resource management, support services from farm to table, and broad-based local partnerships.

The DA 2012 budget amounting to Php61.42billion, inclusive of attached corporations, will be spent mainly to pursue the FSSP which is the centerpiece program of the Aquino administration.

As emphasized before, an important feature of the FSSP is the frontloading of investments, particularly on infrastructure like irrigation, farm-to-market roads,



DA 2012 Thrust is on the following:

and postharvest facilities. We hope to regain momentum in irrigation, with particular focus on cheaper and shorter gestating small-scale irrigation systems and the rehabilitation and/or restoration of national and communal irrigation systems.

Also in support of the FSSP, our National Corn Program is appropriated a substantial increase in FY 2012 for the development of the white corn industry, and the processing of corn grits as supplement to rice. In addition, we have integrated the development of the cassava industry under this Program.

Aside from the regular mandate of the National High-Value Crops Development Program, which is to provide for the appropriate development support services and facilitation of high-value crops access to local and international markets, the Program also incorporates in their FY 2012 budget plan the provision of nurseries to support the National Greening Program of the government (e.g. coffee and cacao planting materials).

For livestock and poultry, our focus

- Improvement of genetic materials;
- Disease prevention, control, and eradication;
- Promotion of the establishment of meat trading centers complete with slaughterhouse, cutting floor, cold storage, and processing/packaging plants; promotion of the regulatory capabilities of the LGUs; and to
- Exert efforts to maintain the FMD-free status (without vaccination) and the Avian Flu-free status of the country.

In fisheries, we are facing the triple threat of: degradation of the coastal ecosystem; climate change; and globalized trading order. Overall, we will focus on resource regeneration, production, and protection.

Specifically, this will entail:

- Establishment and maintenance of mariculture parks;
- Intensification of the "cage for livelihood" program;
- Provision of training and technical assistance in various areas in aquaculture, municipal,

commercial, post-harvest, and regulatory in support to the fishery industry;	lasting real productivity-enhancing measures such as irrigation, post-harvest facilities, research and development, extension, education and training.	roads under the foreign assisted and locally-funded projects;
<ul style="list-style-type: none"> • Establishment of hatcheries and nurseries; • Implementation of Coastal Resource Management projects; • Operation of the Monitoring, Control, and Surveillance (MCS) System; • Compliance with global food safety standards; and • Active participation in the Coral Triangle Initiative (CTI). 	<p>In general, we shall veer away from the provision of private goods and shift to the more strategic intervention of providing public goods which should be the role of national government in the first place.</p> <p>We shall use the 2012 budget to, among others:</p> <ul style="list-style-type: none"> • Generate 87,405 hectares of new areas, rehabilitate 79,246 hectares of degraded irrigation systems, and restore 57,199 hectares; • Install/construct around 4,584 small-scale irrigation projects, among them: 1,283 shallow tube wells, 75 small water reservoirs, 56 small water impounding projects and 3,130 spring development; • Distribute about 4,526 units of postharvest equipment and machineries such as dryers, storage and milling equipment, and dairy equipment and machineries; • Construct close to 2,777 postharvest facilities for drying, storage, processing and transport; • Maintain 65 mariculture parks; • Construct and rehabilitate a total of about 1,284 kilometers of farm-to-market 	<ul style="list-style-type: none"> • Establish strategically-located trading centers such as Benguet, Pangasinan, Nueva Ecija, Negros Occidental, Bohol, and Quezon; and • Implement the Aqua-silviculture Program. <p>We have already attained remarkable achievements under the new leadership in the Department and are motivated more than ever to focus our endeavors towards improving the lives of our farmers and fisherfolk. With the help of the private sector and various stakeholders, our goals of food security and a more-competitive agri-fishery industry can be realized.</p>
<p>Other key programs being implemented include organic agriculture (to tap the emerging export market for organic vegetables), trading centers, and public-private partnerships. In addition, locally-funded projects and foreign-assisted projects are the Department's main contribution to the poverty alleviation program of the government, and, in the case of some local-funded projects, our contribution to the peace process.</p> <p>Our lessons in the past have taught us that the provision of short-term interventions such as direct input subsidies (fertilizer, seed, chemicals, and pesticides) not only cultivates a culture of dependency among the farmers and fishers, it also breeds corruption and wastes scarce government resources.</p> <p>Thus, we can expect more and more of the DA's interventions to be focused on longer-term and longer-</p>		

DEPARTMENT OF AGRICULTURE

Key Officials
as of December 31, 2011

HON. PROCESO J. ALCALA

Secretary

UNDERSECRETARIES

Antonio A. Fleta

Undersecretary
for Administration and Finance
and Chairman, ACEF, National
Technical Committee

Joel S. Rudinas

Undersecretary
for Field Operations

Segfredo R. Serrano, Ph.D

Undersecretary
for Policy, Planning, Research
and Development and Regula-

Claron R. Alcantara

Undersecretary
and Chief of Staff

Bernadette Romulo-Puyat

Undersecretary
for Special Concerns

ASSISTANT SECRETARIES

as of December 31, 2011

Dante S. Delima

Assistant Secretary and National
Program Coordinator for Rice

Edilberto M. De Luna

Assistant Secretary for Field Op-
erations and National Program
Coordinator for Corn

Dr. Davinio P. Catbagan

Assistant Secretary for Livestock

Romeo S. Recide

OIC, Assistant Secretary for
Policy and Planning

Salvador H. Salacup

Assistant Secretary for Fisher-
ies/Agribusiness and Marketing
Service and DA Spokesperson

Allan Q. Umali

Assistant Secretary
for Administrative Service
and Local
Government Concerns

Ophelia P. Agawin

Assistant Secretary for Finance

OSEC SERVICE DIRECTORS

as of December 31, 2011

Leandro H. Gazmin
Director, Agribusiness and
Marketing Assistance Service
(AMAS)

Noel O. Reyes
Director, Agriculture and Fisher-
ies Information Service (AFIS)

Gary Glenn B. Fantastico
Director, Information Tech. Cen-
ter for Agriculture and Fisheries
(ITCAF)

Agnes Catherine T. Miranda
Director, Planning Service

Noel A. Padre
OIC-Director, Policy Research
Service (PRS)

Rudy G. Santos
Director, Administrative Service

Zenaida M. Villegas
OIC-Director, Project Development
Service (PDS)

NATIONAL COMMODITY PROGRAM COORDINATORS

Asec. Dante Delima
National Program Coordinator
for Rice

Asec. Edilberto M. De Luna
National Program Coordinator
for Corn

Atty. Asis G. Perez
National Program Coordinator
for Fisheries

Jennifer E. Remoquillo
National Program Coordinator
for High Value Crops Develop-
ment Program (HVCDP)

REGIONAL EXECUTIVE DIRECTORS

as of December 31, 2011

Valentino C. Perdido
Regional Executive Director
RFU-I, Capitol Compound
San Fernando, La Union

Abelardo A. Bragas
Regional Executive Director
RFU-IVA, RMIC Bldg., BPI Com-
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Regional Executive Director
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Iloilo City

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Regional Executive Director
RFU-II, Tuguegarao, Cagayan

Cipriano G. Santiago
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RFUIVB, 4th Flr., ATI Bldg., Ellip-
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Leo Cañeda
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tor
RFU-VII, KRC Bldg., Subangda-
co Highway, Mandaue City

Andrew B. Villacorta
Regional Executive Director
RFU-III, Sto. Niño
San Fernando City, Pampanga

Jose V. Dayao
Regional Executive Director
RFU V, San Agustin
Pili, Camarines Sur

Antonio G. Gerundio
Regional Executive Director
RFU-VIII, Kanhuraw Tacloban

City
Carlos B. Mendoza
Regional Executive Director
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Oscar O. Parawan
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Edna M. Mabeza
OIC-Regional Executive Director
RFU-XIII, Butuan City

Marilyn V. Sta. Catalina
Regional Executive Director
CAR, BPI Complex

Atty. Lumala Mariam Balindong
Regional Secretary
ARMM, ORG Compound
Cotabato City

BUREAU DIRECTORS as of December 31, 2011

Asterio P. Saliot
Agricultural Training Institute
(ATI)

Angelina Bondad
Bureau of Agricultural and
Fisheries Product Standards
(BAFPS)

Efren C. Nuestro
Bureau of Animal Industry
(BAI)

Nicodemes P. Eleazar
Bureau of Agricultural Research
(BAR)

Atty. Asis G. Perez
Bureau of Fisheries and Aquatic
Resources (BFAR)

Dr. Clarito M. Barron
Bureau of Plant Industry (BPI)

Engr. Ricardo L. Cachuela
Philippines Center for Posthar-
vest Development and Mechani-
zation (PhilMech)

Silvino Q. Tejada
Bureau of Soils and Water Man-
agement (BSWM)

Romeo S. Recide
Bureau of Agricultural Statistics
(BAS)

HEADS OF ATTACHED AGENCIES AND CORPORATIONS

as of December 31, 2011

Jovita M. Corpuz
Executive Director
Agricultural Credit Policy Council
(ACPC)

Eugenio D. Orpia, Jr.
Administrator
Cotton Development Administration
(CODA)

Norlito R. Gicana
Executive Director
Fertilizer and Pesticide Authority
(FPA)

Cecilia Gloria J. Soriano
Administrator
Fiber Industry Development Authority
(FIDA)

Manuel R. Jarmin
Executive Director
Livestock Development Council (LDC)

Atty. Jane C. Bacayo, DVM, MPA
Executive Director
National Meat Inspection Service
(NMIS)

Dr. Libertado C. Cruz
Executive Director
Philippine Carabao Center (PCC)

Grace J. Cenas
Administrator
National Dairy Authority (NDA)

Angelito T. Banayo
Administrator
National Food Authority (NFA)

Engr. Antonio S. Nangel
Administrator
National Irrigation Administration (NIA)

Edgardo D. Zaragoza
Administrator
National Tobacco Administration (NTA)

Noel A. Juliano
OIC, Executive Director
National Agricultural and Fishery Council
(NAFC)

Atty. Jovy C. Bernabe
President
Philippine Crop Insurance Corporation

(PCIC)

Atty. Rodolfo T. Paz, Jr.
General Manager
Philippine Fisheries Development
Authority (PFDA)

Atty. Ronilo A. Beronio
Executive Director
Philippine Rice Research Institute
(PhilRice)

Federico A. Espiritu
President
Quedan and Rural Credit Guarantee
Corporation (QUEDANCOR)

Ma. Regina Bautista-Martin
Administrator
Sugar Regulatory Administration
(SRA)

Atty. Euclides G. Forbes
Administrator
Philippine Coconut Authority (PCA)

Allan A. Javellana
President
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Endnotes

- ¹ Bureau of Agricultural Statistics [BAS] 2011 Performance of Philippine Agriculture, January – December 2011.
- ² Growth in Production (%), 2010-2011: Palay, 5.78; Corn, 9.32; Sugarcane, 58.27; Mongo, 21.83; Tobacco, 10.89; Rubber, 7.71; Cassava, 5.15; Pineapple, 3.58; Abaca, 3.16; Banana, 0.70; Peanut, 0.36; Eggplant, -0.12; Tomato, -0.34; Coconut, -1.71; Cabbage, -2.83; Calamansi, -3.07; Mango, -4.55, Camote, -4.61; Onion, -5.16; Garlic, -5.30; Coffee (dried beans), -6.36. Source: BAS, *Country Stat*, Other Crops: Volume of Production by Geolocation, Crop, and Year, 31 July 2012.
- ³ NSCB, Gross National Income and Gross Domestic Product by Industrial Origin at constant 2000 prices, Time Series Data as of 31 May 2012, http://nscb.gov.ph/secstat/d_accounts.asp.
- ⁴ NSO, <http://www.census.gov.ph/data/sectordata/datalfs.html>.
- ⁵ BAS, Rice and Corn Situation and Outlook, Vol. 26, No. 1, *January 2012*.
- ⁶ Rice program, Correction to CSB Accomplishment, 30 *January 2012*.
- ⁷ DA Aggie Trends, "DA undertakes 'QTA,' rationing to increase 2012 1Q palay harvest," p. 3, October 2011 issue.
- ⁸ DA-Budget Accountability Report [BAR] (summation of 1st-4th Quarter Physical Accomplishment Reports of DA-Operating Units), *DA-PMED*, February 2012.
- ⁹ Rice program 2011 Accomplishment Report, 13 *January 2012*.
- ¹⁰ Rice program, *op. cit.*
- ¹¹ DA-BAR, *op. cit.*
- ¹² DA-BAR, *op. cit.*
- ¹³ BAS, Major Vegetables and Rootcrops Quarterly Bulletin (October-December 2011), Vol. 6, No. 1, *February 2012*.
- ¹⁴ Corn Program, CY 2011 Annual Report, 27 *January 2012*.
- ¹⁵ DA-BAR, *op. cit.*
- ¹⁶ Corn Program, *op. cit.*
- ¹⁷ *Ibid.*
- ¹⁸ *Ibid.*
- ¹⁹ NABCOR (thru the Corn Program), Corn Post Harvest Processing and Trading Center (PHPTC), 27 *January 2012 initial data*.
- ²⁰ Corn Program, *op. cit.*
- ²¹ *Ibid.*
- ²² *Ibid.*
- ²³ AFIS Accomplishment Report (January-December 2011), 12 *January 2012*.
- ²⁴ Corn Program, *op. cit.*
- ²⁵ *Ibid.*
- ²⁶ High Value Crops Development Program [HVCDP] FY 2011 Highlights of Accomplishment, 19 *January 2012*.
- ²⁷ DA-BAR, *op. cit.*
- ²⁸ HVCDP, *op. cit.*
- ²⁹ HVCDP, *op. cit.*
- ³⁰ HVCDP validation of the draft DA Annual Report, 14 August 2012.
- ³¹ HVCDP, 19 *January 2012*.
- ³² 1,106 of these established school gardens are under HVCDP's CY 2011 funds while the remaining 8,742 gardens are from the Program's CY 2010 continuing funds (BPI, however, is the lead implementor of the school garden project), *HVCDP*, 14 August 2012.
- ³³ National Fisheries Program [NFP], Highlights of Accomplishments (January-December, 2011), *BFAR-FPED*, 1 *February 2012*.
- ³⁴ DA-BAR, *op. cit.*
- ³⁵ NFP, *op. cit.*
- ³⁶ NFP, *op. cit.*

- ³⁷ Of these 45 hatcheries, 14 are central hatcheries (for bangus and tilapia), 13 are satellite hatcheries (tilapia), and 18 are hatcheries for other species, NFP, *op. cit.*
- ³⁸ Of these 63 maintained MPs, 55 are operational; two (2) are for installation of techno-demonstration cages; one (1) currently operates with cages and 22 seaweed farms; three (3) are for installation of rope-framed cages; and two (2) are for rehabilitation, BFAR (FPED), Status and Location of Established Mariculture Parks (as of 17 January 2012).
- ³⁹ BFAR (FPED), *op. cit.*
- ⁴⁰ NFP, *op. cit.*
- ⁴¹ BFAR (FPED), *op. cit.*
- ⁴² Philippine Fisheries Development Authority [PFDA], Highlights of Accomplishment for CY 2011, 24 January 2012.
- ⁴³ Additional Inputs to the NFP report, BFAR-FPED, 16 August 2012.
- ⁴⁴ Bureau of Animal Industry [BAI] 2011 Major Accomplishments, 16 January 2012.
- ⁴⁵ "Agri-Pinoy Livestock Program, Highlights of Accomplishments," briefing material, National Household Food and Nutrition Security Forum, BSWM Convention Hall, 5 March 2012.
- ⁴⁶ BAI, *op. cit.*
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- ⁵² Philippine Coconut Authority [PCA] AR 2011 Inputs to DA Annual Report, 14 August 2012.
- ⁵³ PCA CY 2011 Annual Accomplishment Report, 27 January 2012.
- ⁵⁴ "Food Staples Sufficiency Program 2011-2016 (Part I)," updated draft, DA-Rice Program, 15 May 2012.
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- ⁵⁶ DA Aggie Trends, "Rice and corn farmers go hi-tech with DA grain moisture meters," p. 4, March 2011 issue.
- ⁵⁷ DA Aggie Trends, "'Palay Check' eyed as platform for quality rice certification," p. 8, May 2011 issue.
- ⁵⁸ DA Aggie Trends, "Agri Chief cites rice scientists as 'heroes'," p. 8, November 2011 issue.
- ⁵⁹ DA Aggie Trends, "DA launches white corn program to ease pressure on rice," p. 4, May 2011 issue.
- ⁶⁰ DA Aggie Trends, "Tobacco farmers get P20M for rice," p. 1, June 2011 issue.
- ⁶¹ NFA, Summary of rice import arrivals for 2010 and 2011, 18 May 2012.
- ⁶² NFA, Summary, *op. cit.*
- ⁶³ Breakdown: total constructed = 867.13 km; total rehabilitated = 661.63 km, DA-ROMD, Status of CY 2010 FMR Projects (as of 31 December 2011), 6 June 2012.
- ⁶⁴ PhilMech, CY 2011 Accomplishments (Tramlines and RPCs), 27 January 2012.
- ⁶⁵ A joint project of the DA, Provincial Government of Benguet, Municipal Government of La Trinidad, Benguet Congressional District, Benguet State University, and Benguet Farmers Marketing Cooperative, with the signing of an MOU done at the unveiling ceremony, DA-AMAS Annual Report 2011, 18 January 2012.
- ⁶⁶ The full-blown feasibility study for the APTC conducted by the Development Academy of the Philippines (DAP) was already completed and the pre-bid conference for the construction was held last December 19, 2011, *ibid.*
- ⁶⁷ Not inclusive of NIA's Carry-Over Projects from its CY 2010 Program: 3,362 ha (new areas generated); 49,634 rehabilitated areas; and 12,274 restored areas, NIA, Physical Status of Irrigation Projects CY 2011 Program (as of April 2012). 21 May 2012.
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- ⁷¹ *Ibid.*
- ⁷² *Ibid.*
- ⁷³ *Ibid.*

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- ⁷⁵ *Ibid.*
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- ⁷⁷ *Ibid.*
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- ⁷⁹ Project Development Service (PDS), "Forging Public-Private Partnerships," Status of DA Projects in the PPP Pipeline, 30 March 2012.
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Highlights





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